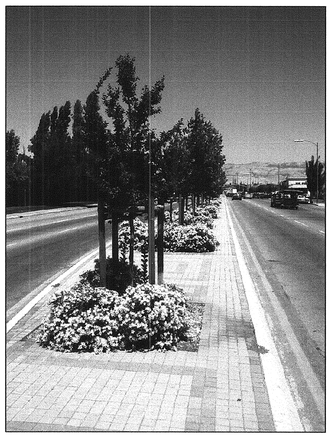
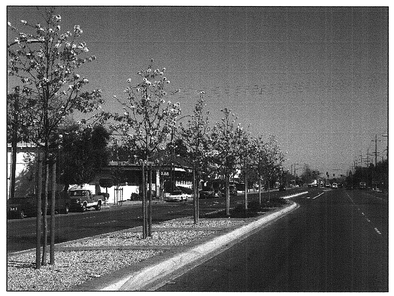
CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

DEPARTMENT OF PUBLIC WORKS
STANDARD LANDSCAPE DETAILS AND SPECIFICATIONS
CITY STREETSCAPE PROJECTS

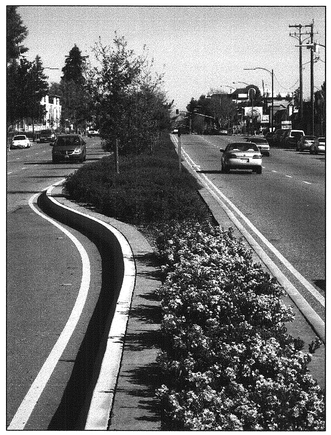
UPDATED: JUNE 2007



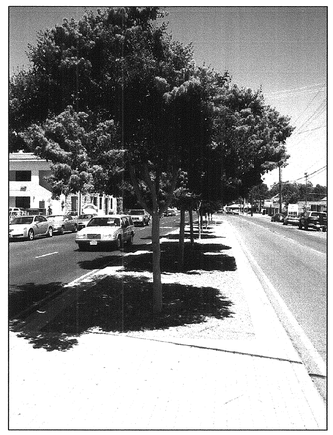
STORY RD. – TYPE 1 ENHANCED



MONTEREY RD. – TYPE 1 ENHANCED



WINCHESTER BLVD. – TYPE 2



BASCOM AVE. – TYPE 1

SHEET INDEX

SHEET #	SHEET TITLE
1	STANDARD LANDSCAPE CONSTRUCTION DETAILS
2	STANDARD LANDSCAPE IRRIGATION DETAILS
3	STANDARD LANDSCAPE IRRIGATION DETAILS
4	STANDARD LANDSCAPE IRRIGATION FLOW SENSOR & MASTER VALVE FOR TYPE 1 AND TYPE 2 CITY STREETSCAPE PROJECTS
5	STANDARD LANDSCAPE RAINMASTER CONTROLLER DETAILS FOR TYPE 1 CITY STREETSCAPE PROJECTS
6	STANDARD LANDSCAPE CALSENSE IRRIGATION CONTROLLER FOR TYPE 2 CITY STREETSCAPE PROJECTS
7	STANDARD LANDSCAPE RECYCLED WATER IRRIGATION DETAILS FOR CITY STREETSCAPE PROJECTS WITH IMMEDIATE CONNECTION TO RECYCLED WATER
8	STANDARD LANDSCAPE PLANTING DETAILS FOR CITY STREETSCAPE PROJECTS
9–10	STANDARD LANDSCAPE SPECIFICATIONS FOR CITY STREETSCAPE PROJECTS BUILT BY DEVELOPERS

NOTES:

1. FOR USE IN CONJUNCTION WITH "GUIDELINES FOR THE PLANNING, DESIGN AND CONSTRUCTION OF CITY STREETSCAPE PROJECTS", REVISED JUNE 2007.
   www.sanjoseca.gov/publicworks/tds/pdfs/StreetscapeGuidelines.pdf

2. THE CONSULTANT IS REQUIRED TO REMOVE THIS COVER SHEET AND INCORPORATE THE SHEETS OF STANDARD LANDSCAPE DETAILS & SPECIFICATIONS WHICH APPLY TO PROJECT SCOPE OF WORK INTO THE PROJECT LANDSCAPE IMPROVEMENT PLANS. THE CONSULTANT SHALL CROSS OUT ANY DETAILS THAT DO NOT APPLY TO PROJECT SCOPE OF WORK.

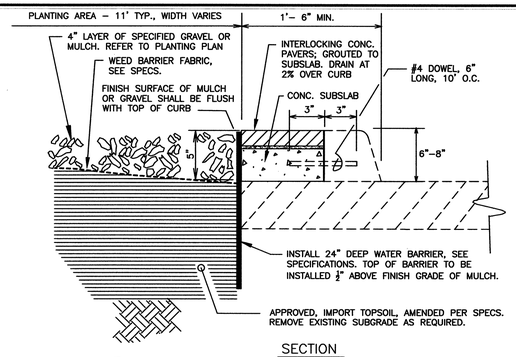
3. THE CONSULTANT SHALL PROVIDE ANY ADDITIONAL DETAILS OR SPECIFICATIONS REQUIRED FOR SPECIALTY IMPROVEMENTS ON ADDITIONAL SHEETS, AND INCORPORATE THOSE INTO THE PROJECT LANDSCAPE IMPROVEMENT PLANS FOR REVIEW AND APPROVAL BY CITY.

APPROVED BY:

Katy Allen — DATE: 8-02-07
KATY ALLEN
DIRECTOR
DEPARTMENT OF PUBLIC WORKS
R.C.E. # 64917
EXP. DATE: JUNE 30, 2009

Jim Helmer — DATE: 8/01/07
JIM HELMER
DIRECTOR
DEPARTMENT OF TRANSPORTATION

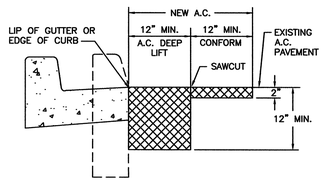
Transportation & Development Services Division – 200 East Santa Clara St., San Jose, Tower 3rd Floor, CA 95113–1905
tel (408) 535–3555 fax (408) 292–6054 www.sanjoseca.gov/Public Works/Details_Specs/index.asp



SECTION

7 CONCRETE PAVERS MAINTENANCE BANDING

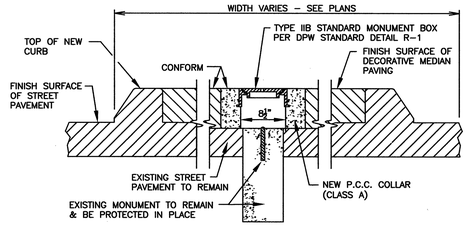
N.T.S.



SPECIAL NOTE: IF THE CONTRACTOR DAMAGES EXISTING ASPHALT SECTION DURING THE REMOVAL/INSTALLATION OF CURB AND GUTTER OR AT THE DISCRETION OF THE INSPECTOR, THE A.C. WILL BE REPAIRED BY SAWCUTTING 12" MINIMUM BACK FROM THE LIP OF GUTTER AND INSTALLING A 12" MINIMUM DEEP LIFT A.C. SECTION AND A 2" A.C. CONFORM.

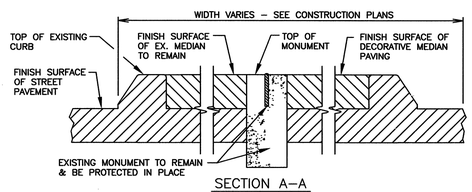
8 CURB & GUTTER REMOVAL & REPLACEMENT

N.T.S.

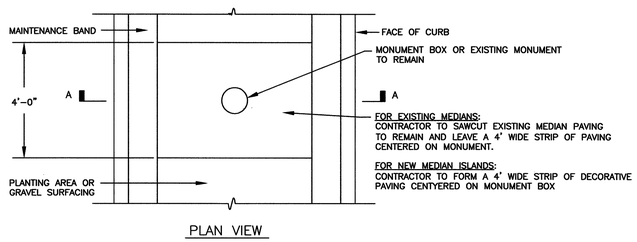


SECTION A–A

NOTE:
REFER TO DETAIL R–17 IN THE DPW STD. DETAILS FOR THE PLAN VIEW OF COVER INSTALLATION



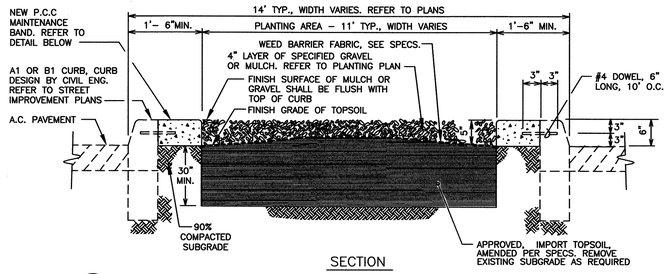
SECTION A–A



PLAN VIEW

9 SURVEY MONUMENT PRESERVATION

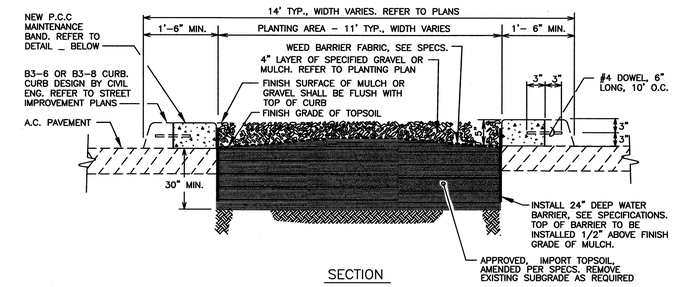
N.T.S.



SECTION

3 TYPICAL MEDIAN ISLAND CROSS–SECTION WITH A1 OR B1 CURB

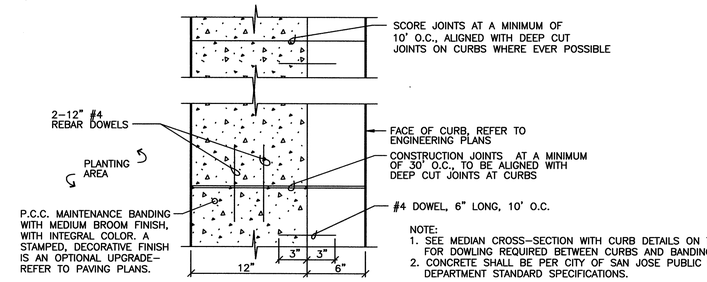
N.T.S.



SECTION

4 TYPICAL MEDIAN ISLAND CROSS–SECTION WITH B3–6 OR B3–8 CURB

N.T.S.

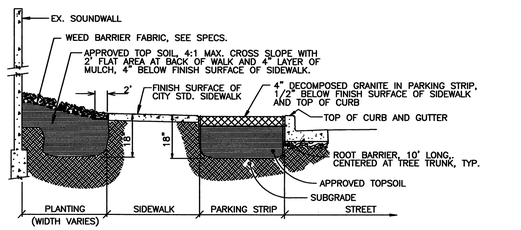


NOTE:
1. SEE MEDIAN CROSS–SECTION WITH CURB DETAILS ON THIS SHEET FOR DOWLING REQUIRED BETWEEN CURBS AND BANDING.
2. CONCRETE SHALL BE PER CITY OF SAN JOSE PUBLIC WORKS DEPARTMENT STANDARD SPECIFICATIONS.

PLAN

5 P.C.C. MAINTENANCE BANDING

N.T.S.

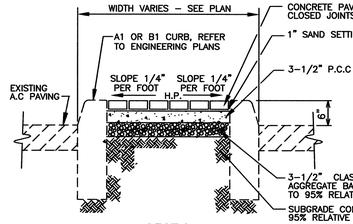


SECTION

NOTE:
1. DO NOT EXCAVATE PLANTING AREAS WITHIN 24" OF WALL FOUNDATION, FINISH GRADE OF PLANTING AREA TO BE 2 1/2" BELOW FINISH SURFACE OF SIDEWALK.
2. TOP SOIL TO BE APPROVED AND AMENDED PER SPECIFICATIONS. IF EXISTING TOPSOIL DOESN'T COMPLY WITH SPECIFICATIONS, DEVELOPER SHALL PROVIDE REMOVAL OF EXISTING AND IMPORT TOPSOIL.
3. CONSTRUCT BERMS AROUND PLANT MATERIALS ON SLOPED AREAS ONLY, PER SPECIFICATIONS

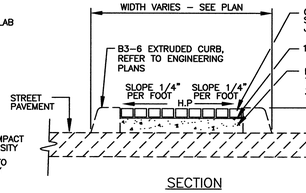
6 TYPICAL BACK–UP AREA CROSS SECTION

N.T.S.



SECTION

A1 OR B1 CURBS



SECTION

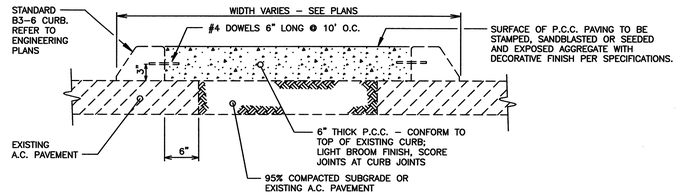
B3–6 CURBS

NOTES:

1. REFER TO CONSTRUCTION LAYOUT PLANS FOR INTERLOCKING CONCRETE PAVER LAYOUT AND SPECIFICATIONS.
2. REFER TO CIVIL ENGINEERING PLANS FOR CURB LAYOUT. WIDTH OF MEDIAN CROSS SECTION TO BE ADJUSTED, WITH PRIOR APPROVAL FROM DEPARTMENT OF TRANSPORTATION, TO REDUCE CUTTING OF PAVERS.

A INTERLOCKING CONCRETE PAVERS

N.T.S.



SECTION

NOTES:

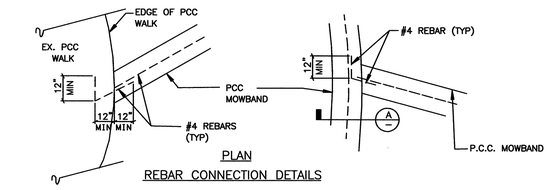
1. SCORING AND CONSTRUCTION JOINTS TO BE INSTALLED AT 5'–0" O.C., OR AS SHOWN ON PLANS.
2. REFER TO SHEETS ___ FOR DECORATIVE P.C.C. PAVING LAYOUT AND SPECIFICATIONS.

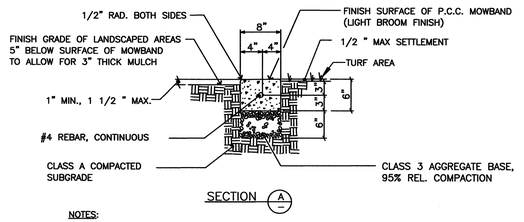
B P.C.C. CONCRETE PAVING WITH SPECIAL FINISH

N.T.S.

1 DECORATIVE PAVING OPTIONS FOR MEDIAN ISLANDS

NOTE: DECORATIVE P.C.C. CONCRETE OR MASONRY PAVING IS REQUIRED IN PORTIONS OF MEDIANS TOO NARROW FOR LANDSCAPING. SELECTION OF DECORATIVE PAVING AND LAYOUT REQUIRES PRIOR APPROVAL BY DEPARTMENT OF PUBLIC WORKS, ON A PROJECT BY PROJECT BASIS.





SECTION A

NOTES:

1. EXPANSION JOINTS USING 1/4" PREMOLDED JOINT FILLER (FELT) SHALL BE INSTALLED AT 5 FT. INTERVALS MAXIMUM OR AS SHOWN ON THE PLAN.
2. CONCRETE EDGING TO BE INSTALLED BETWEEN CITY AND PRIVATE PROPERTY, AS A BOUNDARY MARKER, IN BACK–UPS.

2 P.C.C. CONCRETE MOWBAND, EDGING OR SEPARATOR BAND

N.T.S.

PROJECT NAME:

SHEET TITLE:

STANDARD LANDSCAPE CONSTRUCTION DETAILS FOR CITY STREETSCAPE PROJECTS

◇	REVISIONS	DESIGN BY	DESIGN DATE	CITY APPR.	APPR. DATE

STAMP & SIGNATURE BY CALIFORNIA LICENSED LANDSCAPE ARCHITECT:

CONSULTANT'S NAME, ADDRESS & PHONE:

PERMIT #
PROJECT #
PROJECT INSPECTOR:
VM:

PROJECT ENGINEER — DATE 6/29/07
LANDSCAPE DESIGN REVIEW — Gabrielle Wilder, L.A. — DATE 6/27/07
DEPARTMENT OF TRANSPORTATION, LANDSCAPE MAINTENANCE — DATE 6/25/2007
DEPARTMENT OF TRANSPORTATION, LANDSCAPE MAINTENANCE — DATE 6/27/07
MUNICIPAL WATER, SBWR — Timothy S.N. Town — DATE 6-11-07
SURVEY SECTION — Patty Cannon — DATE 6/25/07

DEPARTMENT OF PUBLIC WORKS
SAN JOSE, CALIFORNIA

CITY OF SAN JOSE
CAPITOL OF SILICON VALLEY

APPROVED BY KATY ALLEN
DIRECTOR OF PUBLIC WORKS

SHEET 10 OF 10

NOTE REGARDING FUTURE RECYCLED WATER SUPPLY

1. THIS IRRIGATION SYSTEM IS DESIGNED TO USE RECYCLED WATER.
2. INITIALLY, THIS SYSTEM SHALL BE SUPPLIED WITH POTABLE WATER, AND SHALL UTILIZE A REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLY LOCATED AS CLOSE AS POSSIBLE TO THE POTABLE WATER METER FOR THIS SYSTEM.
3. WHEN RECYCLED WATER IS AVAILABLE TO THIS SITE, THE SYSTEM'S OWNER/REPRESENTATIVE, UNDER THE DIRECTION OF SOUTH BAY WATER RECYCLING, SHALL BE RESPONSIBLE FOR:
   A) THE SWITCHING OF THIS SYSTEM'S WATER SUPPLY FROM POTABLE WATER TO RECYCLED WATER. THIS INCLUDES:
      I) THE REMOVAL OF THE SYSTEM'S BACKFLOW ASSEMBLY
      II) ALL PIPING WORK NECESSARY TO ADEQUATELY SEPARATE THE SYSTEM FROM THE POTABLE WATER POINT OF CONNECTION AND CONNECT IT TO THE NEW RECYCLED WATER POINT OF CONNECTION.
   B) THE ACQUISITION AND INSTALLATION OF RECYCLED WATER WARNING TAGS ON ALL VALVES AND APPURTENANCES, VALVE BOX LIDS PERMANENTLY MARKED "RECYCLED WATER" (CONCRETE LIDS MUST HAVE THE MOLDED-IN MARKING FROM THE FACTORY, "RECYCLED WATER", AND CAST IRON AND METAL CHECKER PLATE LIDS MUST HAVE THE BEAD-WELDED OR PERMANENTLY STAMPED MARKING "RECYCLED WATER"), RECYCLED WATER ADVISORY SIGNS, AND RECYCLED WATER CONTROLLER LABELS.
4. THE SYSTEM'S OWNER/REPRESENTATIVE SHALL BE RESPONSIBLE FOR THE IRRIGATION SYSTEM'S CONFORMITY TO SOUTH BAY WATER RECYCLING RULES AND REGULATIONS.
5. CONTACT SOUTH BAY WATER RECYCLING AT (408) 277-3671 FOR MORE INFORMATION.

Notes for Irrigation Systems Designed for Future Connection to Recycled Water

Instructions For Providing the Required Recycled Water General Site Information On the Irrigation Plans:

Supply the following information box for each recycled water system with its own meter, and place this information on the same sheet as the meter/point of connection it pertains to. Fill out the form as applicable, but do not delete any of them. If there is more than one recycled water system with its own meter on the same set of plans, then differentiate each metered system by assigning it a letter in the title for its own general site information box (for example, GENERAL SITE INFORMATION for RECYCLED WATER USE for METER "A"); also, call out each recycled water meter on the plans using its respective letter designator.

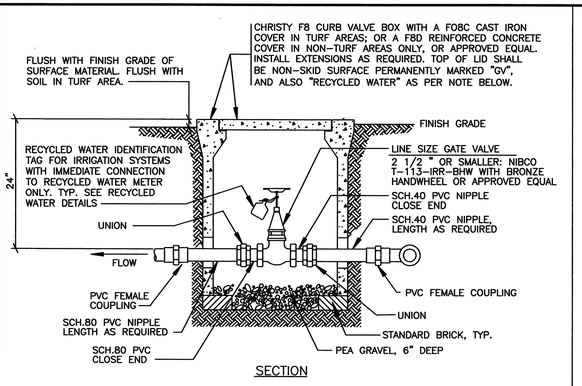
GENERAL SITE INFORMATION for RECYCLED WATER USE

1. LANDSCAPED RECYCLED WATER IRRIGATION USE AREA: *(square footage)*.
2. PUBLIC ACCESS TO SITE GROUNDS IS *(indicate: UNRESTRICTED or RESTRICTED)*.
3. OWNER: *(legal property owner's name)*.
4. PROPERTY MANAGER CONTACT: *(name, title, and telephone number)*.
5. TENANT(S): *[name(s) & phone number(s); if not applicable, state NOT APPLICABLE]*.
6. ON-SITE WELL LOCATIONS: *(for example, ONE; if none, state NONE)*.
7. WELLS ON ADJACENT SITES LOCATED WITHIN 50 FT. OF RECYCLED WATER APPROVED USE AREA OR WITHIN 100 FT. OF ANY RECYCLED WATER IMPOUNDMENT: *(for example, ONE; if none, state NONE)*.
8. OUTDOOR DRINKING FOUNTAINS IN/NEAR THE RECYCLED WATER APPROVED USE AREA: *(for example, ONE; if none, state NONE)*.
9. OUTDOOR EATING AREA(S) IN/NEAR THE RECYCLED WATER APPROVED USE AREA: *(for example, ONE; if none, state NONE)*.
10. WATER FEATURES ON SITE: *(examples below; if none, state NONE)*.

Number:	Type:	Water Source:
One	*fountain*	*recycled*
One	*pond*	*potable*

Notes for Irrigation Systems Designed for Immediate Connection to Recycled Water

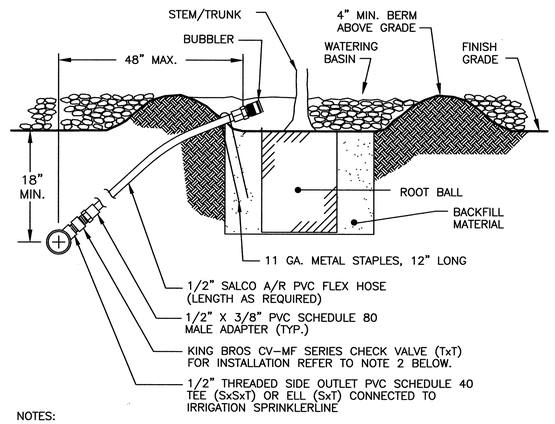
6 SOUTH BAY WATER RECYCLING ("SBWR") REQUIRED RECYCLED WATER IRRIGATION PLAN NOTES



SECTION

RECYCLED WATER LID IDENTIFICATION NOTE:
FOR IRRIGATION SYSTEMS WITH IMMEDIATE CONNECTION TO RECYCLED WATER, CONCRETE LIDS MUST HAVE THE MOLDED-IN MARKING FROM THE FACTORY, "GV" AND "RECYCLED WATER", AND CAST IRON AND METAL CHECKER PLATE LIDS MUST HAVE THE BEAD-WELDED OR PERMANENTLY STAMPED MARKING, "RECYCLED WATER".

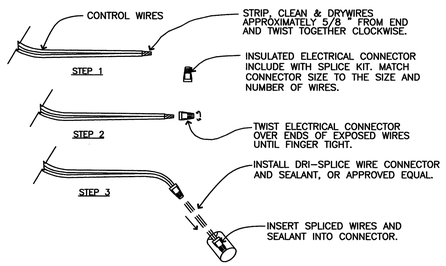
3 GATE VALVE (FOR SIZES 3/4 " TO 2 1/2 ") N.T.S.



NOTES:

1. INSTALL BUBBLER ABOVE ROOT BALL. INSTALL BUBBLER ON UPHILL SIDE OF PLANT WHERE APPLICABLE. ALLOW 6" MINIMUM DISTANCE BETWEEN BUBBLER AND STEM/TRUNK.
2. INSTALL CHECK VALVE (TxT) WHERE ELEVATION OF HIGHEST BUBBLER IN CIRCUIT IS LESS THAN 4 FEET FROM THE LOWEST BUBBLER IN CIRCUIT.

4 BUBBLER ON FLEX RISER FOR TREES & SHRUBS ON SLOPES IN BACK-UP AREAS NTS

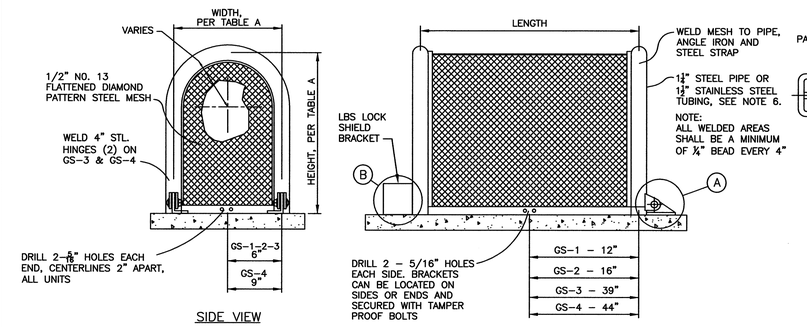


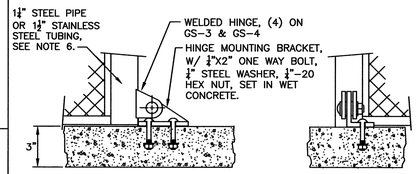
PROFILES

NOTES:

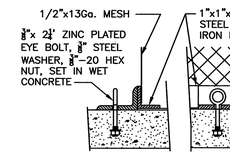
1. PROVIDE 24" EXPANSION LOOP OF CONTROL WIRE FOR FUTURE EXPANSION.
2. BUNDLE & TAPE WIRES PER IRRIGATION TRENCHING DETAILS.
3. ALL CONNECTIONS TO HAVE SPLICE KIT.
4. ALL SPLICES HAVE TO BE MADE IN VALVE BOX.

5 WIRE SPLICING DETAIL N.T.S.





A HINGE DETAIL



B PADLOCKING DETAIL

NOTES:

1. AFTER ALL WELDING, ENTIRE UNIT SHALL BE PROCESSED WITH IRON PHOSPHATE TREATMENT. ELECTROSTATIC APPLICATION OF POWDER SHALL BE FUSION BONDED RAL1019 WOODLANDS TAN OR TCI-8810-6058 FOREST GREEN OR APPROVED EQUAL.
2. ALL UNITS ALSO AVAILABLE IN 304 SS. GS-3.5 AVAILABLE IN 304 SS. ONLY.
3. ALL BOLTS FOR HINGES AND HASPS SHALL BE ZINC PLATED TAMPER PROOF, EXCEPTION - USE SS HARDWARE FOR SS UNITS.

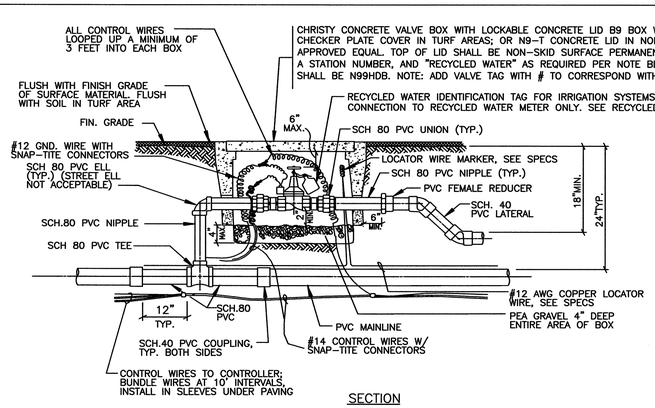
GS = POWDER COATED STEEL GUARD SHACK

CGS = STAINLESS STEEL COAST GUARD SHACK W/ SAND BLASTED SATIN FINISH

TABLE A - BACKFLOW UNIT AND ENCLOSURE SIZES

WILKINS RP BACKFLOW PREVENTER				MINIMUM ENCLOSURE DIMENSIONS			
SIZE	MODEL	LENGTH	TYPE	W	L	H	TYPE
3/4"	975XL	14"	SCREWED	12"	32"	24"	SWING HINGE
1"	975XL	14 1/4 "	SCREWED	12"	32"	24"	SWING HINGE
1 1/2"	975XL	20"	SCREWED	18"	42"	30"	SINGLE-SWING HINGE
2"	975XL	21 1/4 "	SCREWED	18"	42"	30"	SINGLE-SWING HINGE
3"	975	48 3/4 "	FLANGED	26"	84"	40"	DOUBLE-SWING HINGE
4"	975	65 1/4 "	FLANGED	32"	101"	42"	DOUBLE-SWING HINGE

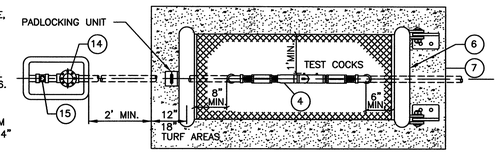
1 REDUCED PRESSURE BACKFLOW PREVENTER WITH STRAINER, PRESSURE REGULATING VALVE AND ENCLOSURE FOR POTABLE WATER (3/4" TO 2" BACKFLOW & SINGLE-SWING ENCLOSURE SHOWN) N.T.S.



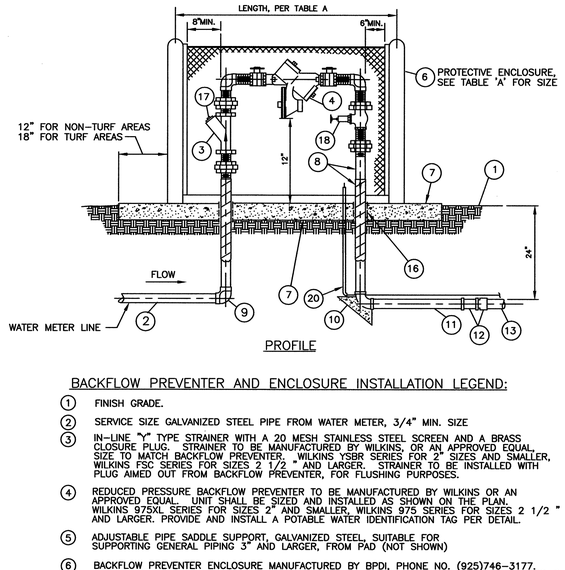
SECTION

NOTE:
REFER TO THE SPECIFICATIONS FOR PIPE CONNECTIONS.
RECYCLED WATER LID IDENTIFICATION NOTE:
FOR IRRIGATION SYSTEMS WITH IMMEDIATE CONNECTION TO RECYCLED WATER, CONCRETE LIDS MUST HAVE THE MOLDED-IN MARKING FROM THE FACTORY, "RCV" AND "RECYCLED WATER", AND CAST IRON AND METAL CHECKER PLATE LIDS MUST HAVE THE BEAD-WELDED OR PERMANENTLY STAMPED MARKING, "RECYCLED WATER".

2 TYPICAL REMOTE CONTROL VALVE DETAIL N.T.S.



PLAN



PROFILE

BACKFLOW PREVENTER AND ENCLOSURE INSTALLATION LEGEND:

1. FINISH GRADE.
2. SERVICE SIZE GALVANIZED STEEL PIPE FROM WATER METER, 3/4" MIN. SIZE
3. IN-LINE "Y" TYPE STRAINER WITH A 20 MESH STAINLESS STEEL SCREEN AND A BRASS CLOSURE PLUG. STRAINER TO BE MANUFACTURED BY WILKINS, OR AN APPROVED EQUAL. SIZE TO MATCH BACKFLOW PREVENTER. WILKINS YSBR SERIES FOR 2" SIZES AND SMALLER, WILKINS FSC SERIES FOR SIZES 2 1/2 " AND LARGER. STRAINER TO BE INSTALLED WITH PLUG AIMED OUT FROM BACKFLOW PREVENTER, FOR FLUSHING PURPOSES.
4. REDUCED PRESSURE BACKFLOW PREVENTER TO BE MANUFACTURED BY WILKINS OR AN APPROVED EQUAL. UNIT SHALL BE SIZED AND INSTALLED AS SHOWN ON THE PLAN. WILKINS 975XL SERIES FOR SIZES 2" AND SMALLER, WILKINS 975 SERIES FOR SIZES 2 1/2 " AND LARGER. PROVIDE AND INSTALL A POTABLE WATER IDENTIFICATION TAG PER DETAIL.
5. ADJUSTABLE PIPE SADDLE SUPPORT, GALVANIZED STEEL, SUITABLE FOR SUPPORTING GENERAL PIPING 3" AND LARGER, FROM PAD (NOT SHOWN)
6. BACKFLOW PREVENTER ENCLOSURE MANUFACTURED BY BPDI, PHONE NO. (925)746-3177. ENCLOSURE SHALL BE: LIFT OFF UNIT FOR MODEL GS-1, AND GS-2; HINGED UNIT FOR GS-3, GS-3.5, AND GS4. FOR POWDER COAT MODELS, FRAME SHALL BE 1-1/4" SCH. 40 STEEL PIPE END FRAMES, A-53 E.W. BLK STEEL PIPE WITH 1" x 1" x 1/8" STEEL ANGLE BASE AND 1/2" #13 GA. DIAMOND PATTERN FLAT ROLLED EXPANDED STEEL WITH ALL WELDED CONSTRUCTION, 4" O.C.
   FOR 304 STAINLESS STEEL MODELS PIPE END FRAMES SHALL BE 1-¼" 304 STAINLESS STEEL TUBING, ASTM A-312, WITH 1"X1"X⅛" 304 STAINLESS STEEL ANGLE BASE AND ½" # 13 GA TYPE 304 STAINLESS STEEL DIAMOND PATTERN FLAT ROLLED EXPANDED METAL, SAND BLASTED TO REMOVE ALL SHARP EDGES. ALL WELDED CONSTRUCTION 4" O.C. ALL HARDWARE, BRACKETS, NUTS AND BOLTS SHALL BE STAINLESS STEEL.
7. 4" CONCRETE SLAB
8. GALVANIZED STEEL PIPE RISER WITH FLANGED CONNECTIONS OR WITH A MINIMUM OF TWO (2) UNIONS FOR THREADED CONNECTIONS. SIZES PER BACKFLOW PREVENTER. WRAP PIPE AND FITTINGS BELOW GROUND WITH POLYETHYLENE WRAP (8 MIL). INSTALL SCHEDULE 40 PVC SLEEVE THROUGH CONCRETE PAD.
9. GALVANIZED STEEL 90 ELL, FLANGED OR THREADED, SIZED AND INSTALLED AS SHOWN.
10. CONCRETE THRUST BLOCK FOR MAINLINE 2-1/2" OR LARGER (SEE THRUST BLOCK DETAILS THIS SHEET).
11. GALVANIZED STEEL PIPE NIPPLE WITH FLANGED CONNECTIONS OR WITH A MINIMUM OF TWO (2) UNIONS FOR THREADED CONNECTIONS. SIZE PER BACKFLOW PREVENTER.
12. GALVANIZED FITTING COUPLING WITH PVC MALE ADAPTER
13. MAIN LINE PIPE, CLASS 315 PVC FOR LINES 2" AND LARGER AND SCHEDULE 40 PVC FOR LINES 1 1/2 " AND SMALLER. (SIZE AS SHOWN ON THE PLAN).
14. WATER METER AND CONCRETE BOX. REFER TO PLAN FOR SIZE. PROVIDE AND INSTALL A POTABLE WATER IDENTIFICATION TAG PER DETAIL.
15. CORPORATION STOP INSTALLED BY OTHERS.
16. PVC CLASS 315 SLEEVE
17. BRASS CLOSURE PLUG.
18. PRESSURE REGULATING VALVE TO BE MANUFACTURED BY WILKINS OR APPROVED EQUAL. SIZE TO MATCH BACKFLOW PREVENTER. WILKINS MODEL 500 FOR SIZES 2" AND SMALLER, WILKINS MODEL 500PC FOR SIZES 2 1/2" AND LARGER. REGULATING VALVE NOT NOT REQUIRED IN SYSTEMS DESIGNED TO OPERATE AT UP TO 90 P.S.I.
19. #12 AWG COPPER LOCATOR WIRE AND MARKER FOR IRRIGATION MAINLINES, QUICK COUPLER LINES, AND POTABLE WATER LINE IN A 1" RIGID METALLIC PVC CONDUIT COATED CONDUIT SLEEVE THROUGH THE CONCRETE PAD.

NOTES:

1. GATE VALVES AND TEST COCKS ARE REQUIRED.
2. CAGE MUST CLEAR ASSEMBLY WHEN OPENING AND CLOSING
3. DEVICE MUST BE ACCESSIBLE FOR TESTING AND MAINTENANCE.
4. PROTECTION FROM FREEZE DAMAGE IS REQUIRED. INSTALL FREZE PROTECTION JACKET.
5. ENCASE ALL BURIED METALLIC SURFACES WITH POLYETHYLENE WRAP (8 MIL.) AS SPECIFIED IN AWWA C105.
6. CONTRACTOR SHALL PAY FOR AND COORDINATE, THE INSTALLATION OF THE NEW WATER METER WITH THE WATER COMPANY.
7. BACKFLOW PREVENTER AND ENCLOSURE TO BE LOCATED PER WATER COMPANY REQUIREMENTS AT BACK OF SIDEWALK AND WITHIN STREET RIGHT OF WAY, IF POSSIBLE. IF THERE IS INSUFFICIENT RIGHT OF WAY IN SIDEWALK AREA TO LOCATE ENCLOSURE, THEN INSTALL IN MEDIAN ISLAND.

PROJECT NAME:

SHEET TITLE:

STANDARD LANDSCAPE IRRIGATION DETAILS FOR STREETSCAPE PROJECTS

	REVISIONS	DESIGN BY	DESIGN DATE	CITY APPR.	APPR. DATE

STAMP & SIGNATURE BY CALIFORNIA LICENSED LANDSCAPE ARCHITECT:

CONSULTANT'S NAME, ADDRESS & PHONE:

PERMIT #
PROJECT #

PROJECT INSPECTOR:
VM:

PROJECT ENGINEER — DATE 6/29/07
DEPARTMENT OF TRANSPORTATION, LANDSCAPE MAINTENANCE — DATE 6/25/2007
MUNICIPAL WATER, SBWR — Timothy S.N. Town — DATE 6-22-07

LANDSCAPE DESIGN REVIEW — Gabrielle Wilder, L.A. — DATE 6/27/07
DEPARTMENT OF TRANSPORTATION, LANDSCAPE MAINTENANCE — DATE 6/27/07
SURVEY SECTION — DATE

DEPARTMENT OF PUBLIC WORKS
SAN JOSE, CALIFORNIA

CITY OF SAN JOSE CAPITOL OF SILICON VALLEY

APPROVED BY KATY ALLEN
DIRECTOR OF PUBLIC WORKS

SHEET 12 OF 10

IRRIGATION EQUIPMENT LEGEND

SYM	MANUF.	MODEL NO.	DESCRIPTION
⊟	WILKENS	975XL	–" REDUCED PRESSURE BACKFLOW PREVENTER WITH WILKENS YSBR SERIES STRAINER
◓	GRISWOLD	2000	REMOTE CONTROL VALVE, SEE VALVE CHART
⊕	GRISWOLD	2160	MASTER REMOTE CONTROL VALVE, TYPE 1 & 2 PROJECTS
C	RAINMASTER	'EAGLE'	IRRIGATION CONTROLLER RAINMASTER, 'EAGLE' CA6–RM3, REFER TO ENGINEERING PLANS ___FOR ELECTRICAL, TYPE 1 PROJECTS
	CALSENSE	ET2000e	IRRIGATION CONTROLLER CALSENSE, ET2000e, TYPE 2 PROJECTS
Ⓕ	CALSENSE	FM SERIES	CALSENSE FLOW SENSOR, SIZE AS NOTED ON PLAN, TYPE 1 & 2 PROJECTS
◪	RAINBIRD (RAINBIRD	44LRC 44NP	1" QUICK COUPLER VALVE WITH YELLOW LOCKING RUBBER COVER 1" QUICK COUPLER VALVE WITH FOR RECYCLED WATER SYSTEMS
⋈	NIBCO	T113	GATE VALVE, SIZE PER LINE)
———	PVC	SCH. 40 CLASS 315	MAINLINE, 1" ø TO 1½" ø, PURPLE PIPE MAINLINE, 2" ø AND LARGER, PURPLE PIPE
———	PVC	SCH. 40	LATERAL LINES, SIZE AS NOTED ON PLAN, 1" MIN.
- - - - - -	PVC	CLASS 315	SLEEVING, SIZE AS NOTED ON PLAN.
P.O.C.			POINT OF CONNECTION
M			NEW WATER METER, PAID FOR BY CONTRACTOR, __" SIZE
—II—			CONTROLLER CONDUIT, ¾" SCH. 40, REFER TO CONTROLLER DETAIL

VALVE NO. / VALVE SIZE / GPM SIZE

SPRINKLER HEAD LEGEND

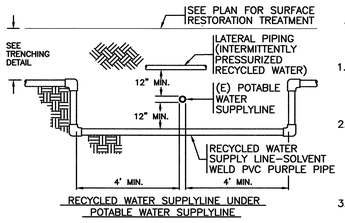
SYM	MANUF.	MODEL NO.	DESCRIPTION
•	RAINBIRD	1402	FLOOD BUBBLERS ON RISERS IN DEEP WATER PIPES AT TREE PLANTING, FULL CIRCLE, TRICKLE PATTERN, .5 GPM 2 PER TREE
⊙	TORO	570 PRX–COM–6	PRESSURE COMPENSATING STREAM BUBBLERS – .50 GPM ON POP–UPS–SHRUB AREAS
●●●	RAINBIRD	1806–SAM–PRS–(FILL IN NOZZLE PATTERN)	SPRAY HEAD–FOR SMALLER TURF AREAS
	TORO	570Z–6P–PRX–COM–(FILL IN NOZZLE PATTERN)	SPRAY HEAD–FOR SMALLER TURF AREAS
○○○	RAINBIRD	300–SAM–PRS	STREAM ROTOR SPRINKLERS FOR LARGER TURF AREAS
	TORO	300 SERIES	STREAM ROTOR SPRINKLERS FOR LARGER TURF AREAS
●●●	RAINBIRD	1806–SAM–PRS–(FILL IN NOZZLE PATTERN)	SPRAY HEAD–FOR SMALLER SHRUB AREAS
	TORO	570Z–6P–PRX–COM–(FILL IN NOZZLE PATTERN)	SPRAY HEAD–FOR SMALLER SHRUB AREAS
⊗⊗⊗	RAINBIRD	300–SAM–PRS	STREAM ROTOR SPRINKLERS FOR LARGER SHRUB AREAS
	TORO	300 SERIES	STREAM ROTOR SPRINKLERS FOR LARGER SHRUB AREAS

VALVE CHART

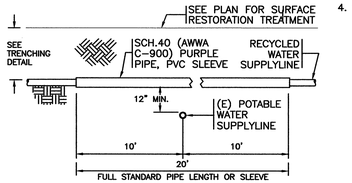
VALVE NO.	VALVE SIZE	HEADS/VALVE	GPM/VALVE	GPM/HEAD

NOTES: CONSULTANT TO COPY ON IRRIGATION PLAN(S) AND MODIFY AS REQUIRED.

7 TYPICAL IRRIGATION LEGENDS & VALVE CHART



RECYCLED WATER SUPPLYLINE UNDER POTABLE WATER SUPPLYLINE



NOTES: 1. IF FULL PIPE LENGTH NOT USED, THEN SLEEVE.
2. IF TIE–IN TO EXISTING IRRIGATION IS NEEDED, AT LESS THAN 10', THEN SLEEVE UP TO THAT POINT.

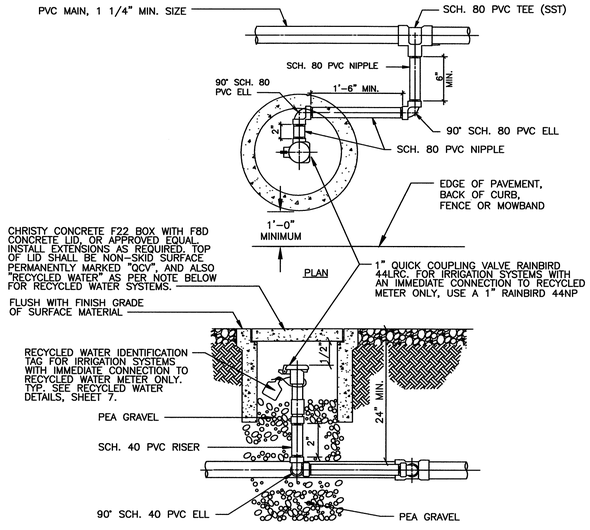
TRENCHING NOTES

1. REFER TO LANDSCAPE STANDARD TRENCHING DETAILS.

PIPE SEPARATION NOTES

1. RECYCLED WATER PRESSURE MAINLINE PIPING MUST BE LOCATED A MINIMUM OF 12 INCHES BELOW THE POTABLE WATER SUPPLYLINES AND A MINIMUM 10' HORIZONTAL CLEARANCE ON EITHER SIDE.
2. RECYCLED WATER PRESSURE MAINLINE PIPELINES ARE ALLOWED OVER POTABLE PIPELINES WITH A MINIMUM OF 12 INCHES VERTICAL SEPARATION IF A FULL STANDARD PIPE LENGTH IS CENTERED OVER THE CROSSING, OR THE RECYCLED PIPELINE IS SLEEVED FOR THE SAME LENGTH.
3. RECYCLED WATER LATERALS (INTERMITTENTLY PRESSURIZED PIPELINES) ARE ALLOWED TO CROSS OVER POTABLE WATER PIPELINES WITH A MINIMUM OF 12 INCHES VERTICAL SEPARATION.
4. SBWR RULES & REGULATIONS REQUIRE THAT A MINIMUM HORIZONTAL SEPARATION OF 10' BETWEEN PARALLEL, BURIED RECYCLED AND POTABLE WATER PIPELINES SHOULD BE MAINTAINED. IF A 10' HORIZONTAL SEPARATION IS NOT PRACTICAL, A SEPARATION OF AT LEAST 4' MAY BE ALLOWED SUBJECT TO THE FOLLOWING SPECIAL CONSTRUCTION CONDITIONS (MUST MEET ONE OF THESE REQUIREMENTS):
   –SOLVENT–WELD PVC PIPE ON RECYCLED WATER SYSTEM.
   –RESTRAINED JOINT PVC PIPE FOR RECYCLED OR POTABLE
   –RESTRAINED JOINT DUCTILE IRON PIPE ON RECYCLED WATER SYSTEM
   –SOLDERED COPPER PIPE ON RECYCLED WATER SYSTEM
   –SLEEVE POTABLE PIPE
   –SLEEVE RECYCLED PIPE
5. SEWER PIPE MUST BE KEPT AT A MINIMUM 12" BELOW RECYCLED WATER LINE.

8 INSTALLATION OF RECYCLED WATER IRRIGATION SUPPLYLINE OVER/UNDER POTABLE WATER SUPPLYLINE FOR SYSTEMS DESIGNED FOR FUTURE OR IMMEDIATE CONNECTION TO RECYCLED WATER N.T.S.

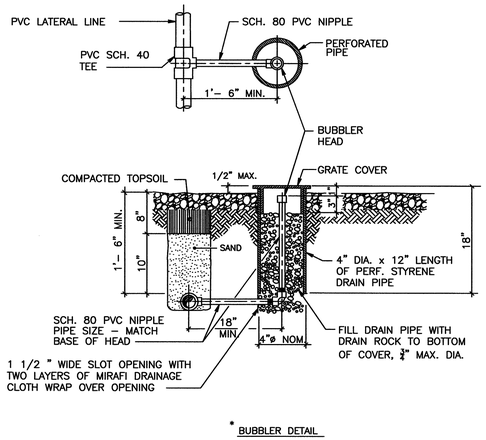


PROFILE

NOTES: 1. REFER TO THE SPECIFICATIONS FOR PIPE CONNECTIONS.
2. STREET ELLS SHALL NOT BE ACCEPTABLE

RECYCLED WATER LID IDENTIFICATION NOTE:
FOR IRRIGATION SYSTEMS WITH IMMEDIATE CONNECTION TO RECYCLED WATER, CONCRETE LIDS MUST BE HAVE THE MOLDED–IN MARKING FROM THE FACTORY, "OCV" AND "RECYCLED WATER", AND CAST IRON AND METAL CHECKER PLATE LIDS MUST HAVE THE BEAD–WELDED OR PERMANENTLY STAMPED MARKING, "RECYCLED WATER".

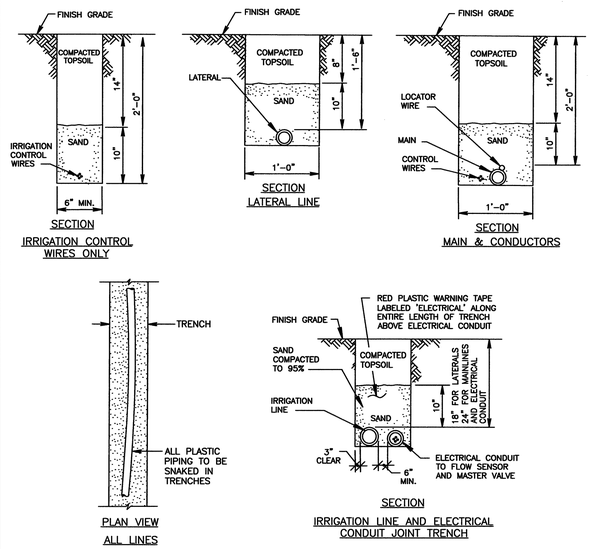
5 QUICK COUPLING VALVE DETAIL N.T.S.



* BUBBLER DETAIL

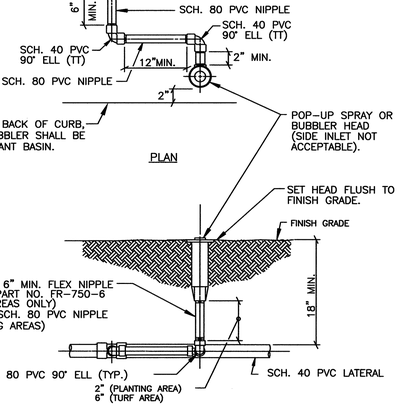
*INSTALL AT LOCATIONS SHOWN ON PLAN.

6 BUBBLER IN DEEP WATERING PIPE FOR TYPE 1 TREE PLANTINGS ONLY N.T.S.



NOTES:
1. TAPE AND BUNDLE WIRING AT TEN FOOT INTERVALS.
2. COMPACT TOPSOIL TO 85% IN PLANTING AREAS.
3. SAND BEDDING REQUIRED IN TRENCHES WITH ROCKY TERRAIN, (TYPICAL ALL SITUATIONS) LAY PIPE ON 2" SAND BED.
4. UNDER PAVED AREAS INSTALL ALL IRRIGATION LINES AND CONTROL WIRES IN SLEEVING FOR SPECIFICATIONS.
5. SEE DETAIL ON THIS SHEET FOR TRENCH RESTORATION DETAIL UNDER A.C. STREET PAVING.

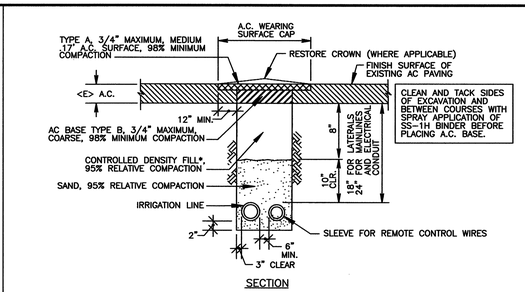
3 IRRIGATION TRENCH DETAILS N.T.S.



PROFILE

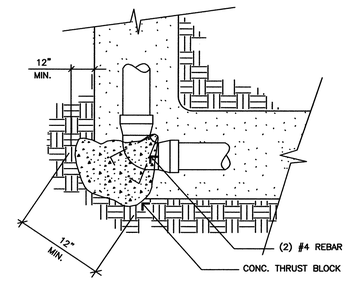
NOTES:
1. ALL ELEMENTS OF SWING JOINTS SHALL BE AS SHOWN AND OF THE SAME DIAMETER AS THE BASE OF HEAD BEING USED.
2. REFER TO THE SPECIFICATIONS FOR PIPE CONNECTIONS.
3. STREET ELLS SHALL NOT BE ACCEPTABLE.

4 POP–UP PLASTIC BODY HEAD DETAIL FOR SPRAY AND BUBBLER HEADS N.T.S.

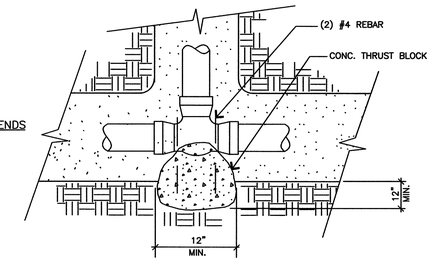


1 TRENCH RESTORATION DETAIL FOR INSTALLING IRRIGATION LINES & SLEEVES UNDER A.C. STREET PAVING N.T.S.

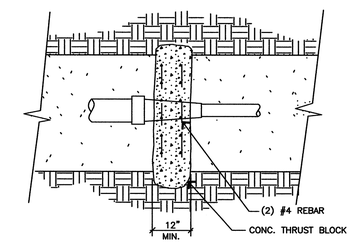
ELLS



TEES AND ENDS



REDUCERS



SECTIONS

NOTES:
1. THRUST BLOCKS SHALL NOT PROJECT HIGHER THAN ½ THE DISTANCE FROM THE BOTTOM OF THE TRENCH TO THE FINISH GRADE. DO NOT COVER ENDS OF FITTINGS OR BOLTS WITH CONCRETE.
2. CONCRETE SHALL HAVE COMPRESSION STRENGTH OF 2000 PSI.
3. THRUST BLOCKING IS REQUIRED WHERE:
   PIPE CHANGES DIRECTION
   PIPE CHANGES SIZES
   STOPS OR DEAD ENDS
   THRUST DEVELOPS AT VALVES FOR 3" SIZE AND LARGER

2 THRUST BLOCKS FOR MAINLINES N.T.S.

PROJECT NAME:

SHEET TITLE:

STANDARD LANDSCAPE IRRIGATION DETAILS FOR CITY STREETSCAPE PROJECTS

◇	REVISIONS	DESIGN BY	DESIGN DATE	CITY APPR.	APPR. DATE

STAMP & SIGNATURE BY CALIFORNIA LICENSED LANDSCAPE ARCHITECT:

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DEPARTMENT OF TRANSPORTATION, LANDSCAPE MAINTENANCE — DATE 6/25/2007
MUNICIPAL WATER, SBWR — Timothy S.N. Town — DATE 6-11-07

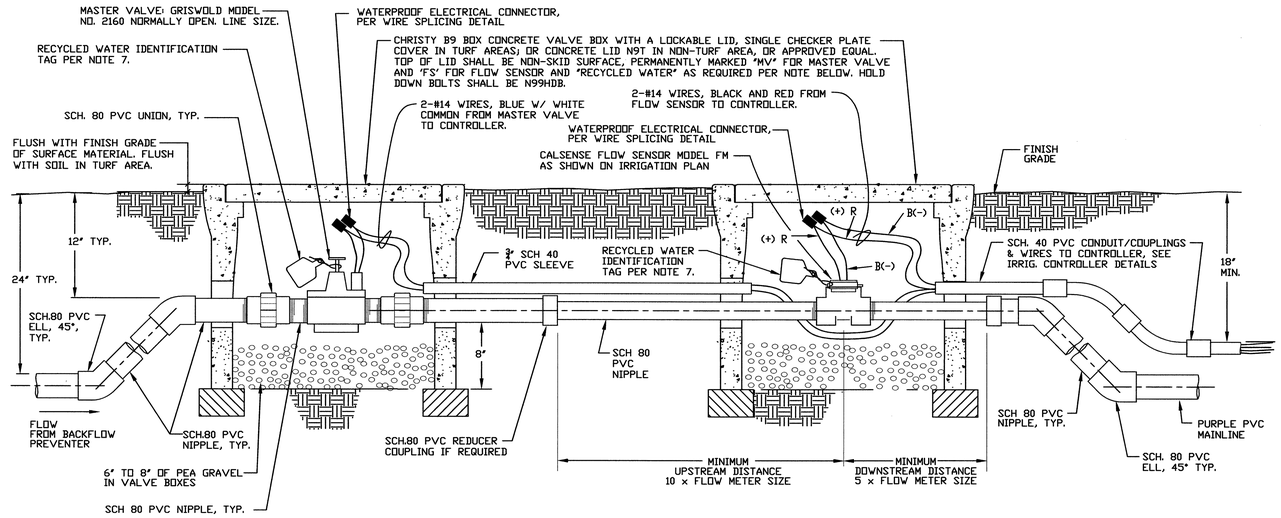
LANDSCAPE DESIGN REVIEW — Gabrielle Wilder, L.A. — DATE 6/27/07
DEPARTMENT OF TRANSPORTATION, LANDSCAPE MAINTENANCE — DATE 6/27/07
SURVEY SECTION — DATE

DEPARTMENT OF PUBLIC WORKS
SAN JOSE, CALIFORNIA

CITY OF SAN JOSE CAPITOL OF SILICON VALLEY

APPROVED BY KATY ALLEN DIRECTOR OF PUBLIC WORKS

SHEET 9 OF 10



SECTION

1 FLOW SENSOR AND MASTER VALVE DETAIL FOR TYPE 1 AND TYPE 2 PROJECTS
NTS

FLOW SENSOR AND MASTER VALVE NOTES

1. THE MASTER VALVE SHALL BE INSTALLED DOWNSTREAM FROM THE WATER METER AND BACKFLOW PREVENTION DEVICE. THE FLOW SENSOR SHALL BE INSTALLED DOWNSTREAM FROM THE MASTER VALVE. NOTE THE INTENDED DIRECTION OF THE FLOW AS INDICATED BY AN ARROW ON TOP OF THE FLOW SENSOR. THERE MUST BE FREE, UNRESTRICTED PIPE OF THE SAME SIZE AS THE FLOW SENSOR, WITH A LENGTH OF AT LEAST 10 TIMES THE FLOW SENSOR SIZE UPSTREAM, AND 5 TIMES THE FLOW SIZE DOWNSTREAM OF THE FLOW SENSOR TEE. THIS SHOULD APPLY TO DISTANCE FROM ANY VALVE, FITTING, SENSOR METER, OR BACKFLOW DEVICE.

2. THE FLOW SENSOR AND MASTER VALVE SHALL SHALL BE EASILY ACCESSIBLE, HOUSED IN A RECTANGULAR VALVE BOX. TOP OF VALVE BOXES SHALL BE MARKED 'FS' FOR FLOW SENSOR AND 'MV' FOR MASTER VALVE. THERE SHALL BE 6" TO 8" OF PEA GRAVEL BENEATH THE FLOW METER IN THE VALVE BOX.

3. THE LENGTH OF #14 AWG WIRE CONNECTING THE FLOW SENSOR AND MASTER VALVE TO THE IRRIGATION CONTROLLER SHALL NOT EXCEED 2,000 FEET.

4. WIRES FROM THE FLOW SENSOR TO THE IRRIGATION CONTROLLER SHALL CONSIST OF ONE (1) BLACK AND ONE (1) RED STANDARD #14 AWG IRRIGATION WIRE INSTALLED IN GREY PVC ELECTRICAL CONDUIT. THE FLOW SENSOR HAS TWO WIRE LEADS, A BLACK AND A RED. AT THE CONTROLLER, THE BLACK WIRE IN THE BLACK WIRE HARNESS SHALL BE CONNECTED TO THE BLACK SENSOR WIRE, AND THE RED WIRE IN THE BLACK WIRE HARNESS SHALL BE CONNECTED TO THE RED FLOW SENSOR WIRE. WIRES FROM THE MASTER VALVE TO THE IRRIGATION CONTROLLER SHALL CONSIST OF ONE (1) BLUE AND ONE (1) WHITE STANDARD #14 AWG IRRIGATION WIRE INSTALLED IN THE SAME GREY PVC ELECTRICAL CONDUIT AS THE FLOW SENSOR WIRES. THE MASTER VALVE HAS TWO WIRE LEADS, A WHITE AND A BLUE, AT THE CONTROLLER. THE WHITE WIRE IN THE BLACK WIRE HARNESS SHALL BE CONNECTED TO THE WHITE MASTER VALVE WIRE, AND THE BLUE IN THE BLACK WIRE HARNESS SHALL BE CONNECTED TO THE BLUE MASTER VALVE WIRE.

5. THE CALSENSE FLOW SENSOR OPERATES AT 9 VOLTS DC. THE FLOW SENSOR WIRES SHALL BE SEPARATED FROM OTHER CONTROL WIRES WHEN PULLED UP AT THE IRRIGATION CONTROLLER SITE. 24 VAC SHALL NOT BE USED TO TEST FIELD WIRES WHEN DETERMINING PROPER SEQUENCING, AND IS APPLIED TO THE FLOW SENSOR WIRES. THIS WOULD RESULT IN THE SENSING UNIT IN THE FLOW SENSOR TO BE DAMAGED.

6. ALL ELECTRICAL CONNECTIONS SHALL BE TIGHT AND DRY. ANY WATER LEAKING INTO A CONNECTION WILL CAUSE FLOW METER PROBLEMS. ADDITIONALLY, THERE SHALL NOT BE ANY BURIED SPLICES BETWEEN THE FLOW SENSOR AND THE IRRIGATION CONTROLLER. USE ONLY CALSENSE RECOMMENDED ELECTRICAL CONNECTORS.

7. IF SYSTEM IS DESIGNED FOR AN IMMEDIATE CONNECTION TO A RECYCLED WATER METER, INSTALL RECYCLED WATER IDENTIFICATION TAGS ON AS SHOWN ABOVE. CONCRETE LIDS MUST HAVE THE MOLDED-IN MARKINGS FROM THE FACTORY, 'MV' FOR MASTER VALVE AND 'FS' FOR FLOW SENSOR AND 'RECYCLED WATER'. CAST IRON AND METAL CHECKER PLATE LIDS MUST HAVE THE BEAD-WELDED OR PERMANENTLY STAMPED MARKING, 'RECYCLED WATER'.

PROJECT NAME:

SHEET TITLE:
STANDARD LANDSCAPE IRRIGATION FLOW SENSOR & MASTER VALVE FOR TYPE 1 AND TYPE 2 CITY STREETSCAPE PROJECTS

	REVISIONS	DESIGN BY	DESIGN DATE	CITY APPR.	APPR. DATE
◇					

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MUNICIPAL WATER, SBWR — Timothy S.N. Town — DATE 6-11-07

LANDSCAPE DESIGN REVIEW — Gabrielle Wilder, L.A. #6... — DATE 6/27/07
DEPARTMENT OF TRANSPORTATION, LANDSCAPE MAINTENANCE — DATE 6/27/07
SURVEY SECTION — DATE

DEPARTMENT OF PUBLIC WORKS
SAN JOSE, CALIFORNIA

CITY OF SAN JOSE
CAPITOL OF SILICON VALLEY

APPROVED BY KATY ALLEN
DIRECTOR OF PUBLIC WORKS

SHEET 10 OF 10

CONTROLLER NOTES

1. CONTROLLER SHALL BE INSTALLED AT LOCATION SHOWN ON IRRIGATION PLANS. WITHIN THE PUBLIC RIGHT-OF-WAY. REFER TO THE ELECTRICAL ENGINEERING PLANS FOR THE POINT OF CONNECTION TO THE POWER SOURCE AND ROUTING OF CONDUITS.
2. ALL CABLES AND CONDUCTORS MUST BE INSTALLED IN CONDUIT. REMOTE CONTROL WIRES ARE DIRECT BURIAL, WITH EXCEPTION OF UNDER PAVED AREAS WHERE THEY ARE INSTALLED IN SLEEVES AS THEY ARE SHOWN IN REMOTE CONTROL VALVE DETAIL.
3. SEE SITE PLAN FOR ORIENTATION AND ROUTING OF CONDUITS.
4. IRRIGATION CONTROLLER SHALL BE MANUFACTURED BY RAIN MASTER. ENCLOSURE SHALL BE MANUFACTURED BY STRONG BOX. CONTROLLER AND ENCLOSURE SHALL BE ASSEMBLED BY JOHN DEERE GREEN TECH DIVISION, PHONE NO. (888) 438-7435. CONTRACTOR TO CONSTRUCT CONCRETE FOOTING AND PROVIDE ALL OTHER EQUIPMENT. CONTRACTOR SHALL PROVIDE PROGRAMMING OF CONTROLLER, WITH TRAINING TO BE PROVIDED (AT NO COST) BY GREEN TECH, (888) 438-7435
5. ALL CONDUCTORS AND WIRING SHALL BE NEATLY ARRANGED AND ORDERED SO THAT CLEAR ACCESS TO ALL EQUIPMENT IS MAINTAINED. CONTRACTOR SHALL SEAL OFF ENDS OF CONDUITS AFTER INSTALLING CONDUCTORS/ WITH DUCT SEAL. EXTEND CONDUITS ALONG WITH APPROPRIATE CABLES/CONDUCTORS TO LOCATIONS SHOWN ON PLANS. REMOTE CONTROL WIRES ARE DIRECT BURIAL, WITH THE EXCEPTION OF UNDER PAVED AREAS WHERE THEY ARE INSTALLED IN SLEEVES.
6. PROVIDE ENGRAVED SCREW-ON PHENOLIC NAMEPLATE ON DEVICE BOX INDICATING LOCATION AND NAME OF ORIGINATING ELECTRICAL PANEL AND BRANCH CIRCUIT IDENTIFICATION NUMBER.
7. EXTEND 1" SCHEDULE 40 PVC CONDUIT TO FLOW SENSOR/MASTER VALVE. REFER TO FLOW SENSOR/MASTER VALVE DETAIL.
8. PROVIDE SPARE REMOTE CONTROL VALVE WIRES FROM CONTROLLER TO #6 PULLBOX. PROVIDE SPARE WIRES IN A QUANTITY TO ALLOW FOR THE FUTURE IMPLEMENTATION OF FULL STATION CAPACITY. CAP SPARE WIRES WITH WIRE NUTS WRAPPED WITH VINYL ELECTRICAL TAPE. LABEL "SPARE". SEE IRRIGATION SPECIFICATIONS.
9. CONTROLLER ASSEMBLY TO BE COVERED BY JOHN DEERE LANDSCAPES GREEN TECH DIVISION 5 YEAR WARRANTY.
10. PROMAX REMOTE RECEIVER AND TRANSMITTER REQUIRED FOR ANY PROJECT OVER 1,000 FT. IN LENGTH.
11. CONTRACTOR SHALL PROVIDE RECYCLED WATER MARKING DECALS, TAGS AND SIGNS FOR IRRIGATION SYSTEMS CONNECTED TO RECYCLED WATER OR AS OTHERWISE INDICATED ON PLANS. SEE SHEET 7.
12. CONTRACTOR SHALL PROVIDE A CH751 LOCK AND TWO KEYS FOR THE CONTROLLER ENCLOSURE, AND SECURE THE ENCLOSURE WITH THE LOCK DURING CONSTRUCTION AND MAINTENANCE. LOCK SHALL BE KEYED TO THE CITY KEY NUMBER ASSIGNED BY DEPARTMENT OF TRANSPORTATION. IMMEDIATELY PRIOR TO PROJECT ACCEPTANCE, THE CONTRACTOR SHALL TURN KEYS OVER TO THE ENGINEER.
13. CONTRACTOR TO PROGRAM CONTROLLERS WITH DESCRIPTION OF WHICH VALVES OPERATE WHICH AREAS, UP TO FORTY CHARACTERS IN LENGTH. I.E., LAWNS, SHRUBS, GROUND COVERS AND WHICH AREAS.

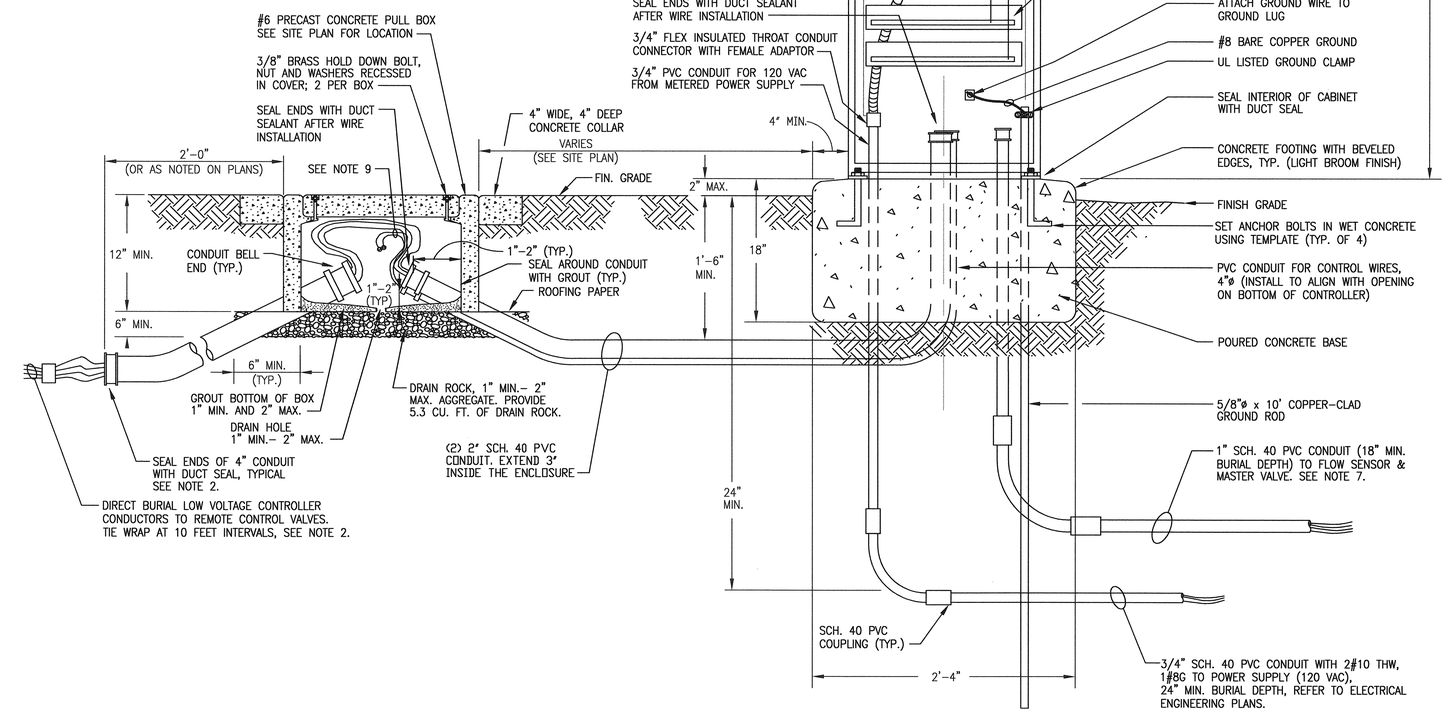
DESIGN CRITERIA FOR STANDARD IRRIGATION SYSTEM

1. ONE CONTROLLER (36 STATIONS MAXIMUM), MASTER VALVE AND FLOW SENSOR PER WATER METER.
2. MASTER VALVE TO BE GRISWOLD 2160 NORMALLY OPEN..
3. FLOW SENSOR TO BE DATA INDUSTRIAL SERIES FSFB
4. IRRIGATION MAINLINE SHALL NOT BE TRENCHED UNDER MAJOR INTERSECTIONS.

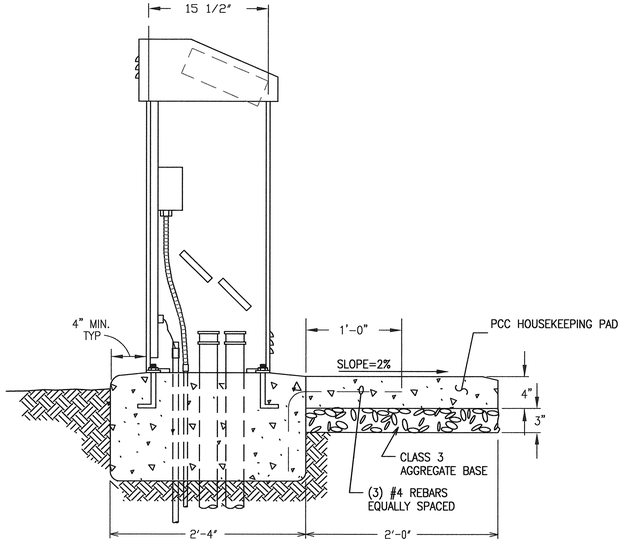
RAIN MASTER 'EAGLE' SPECIFICATION

FURNISH, INSTALL, AND TEST COMPLETE GREEN TECH, UL LISTED CONTROLLER ASSEMBLY CONSISTING OF RM EAGLE CONTROLLER, STAINLESS STEEL PADLOCKABLE ENCLOSURE, TERMINAL INTERFACE BOARDS , WIRELESS COMMUNICATION CARD FOR WEB-BASED (CENTRAL) ACCESS, 120 VOLT GFI OUTLET, ON/OFF SWITCH, CABLING, AND ALL OTHER OPTIONS SPECIFIED BELOW.

REQ'D FOR PROJECT YES	REQ'D FOR PROJECT NO	MAJOR COMPONENT DESCRIPTION	PART NUMBER
		ENCLOSURE/STATION QTY	
X		STRONG BOX STAINLESS STEEL PEDESTAL ENCLOSURE, TOP ENTRY, (16"WX38"HX15.5"D) CONTROLLER STATION QTY: 6, 12, 18, 24, 30 OR 36 (CIRCLE ONE)	CA6-RM3-____/ICARD-F/ RM-ISVC-5Y
		FLOW SENSOR	
		1" BRASS TEE MOUNTED FLOW SENSOR, 2-30 GPM	FSF-100B
		1½" " " " " " 3-50 GPM	FSF-125B
		1½" " " " " " 5-60 GPM	FSF-150B
		2" " " " " " 8-100 GPM	FSF-200B
		RADIO REMOTE UNIT	
		PRO MAX REMOTE TRANSMITTER, RECEIVER, CABLE, CARRYING CASE, ANTENNAS, AND USER'S MANUAL, SEE NOTE NO. 11.	PROMAX



1 IRRIGATION CONTROLLER FRONT SECTION
NOT TO SCALE



3 IRRIGATION CONTROLLER SIDE SECTION
NOT TO SCALE

PROJECT NAME:

SHEET TITLE:
STANDARD LANDSCAPE RAINMASTER IRRIGATION CONTROLLER DETAILS FOR TYPE 1 CITY STREETSCAPE PROJECTS

◇	REVISIONS	DESIGN BY	DESIGN DATE	CITY APPR.	APPR. DATE

STAMP & SIGNATURE BY CALIFORNIA LICENSED LANDSCAPE ARCHITECT:

CONSULTANT'S NAME, ADDRESS & PHONE:

PERMIT #
PROJECT #
PROJECT INSPECTOR:
VM:

PROJECT ENGINEER — DATE 6/29/07
DEPARTMENT OF TRANSPORTATION, LANDSCAPE MAINTENANCE — DATE 6/25/2007
MUNICIPAL WATER, SBWR — Timothy S.N. Town — DATE 6-27-07

LANDSCAPE DESIGN REVIEW — Gabrielle Wilder, R.L.A. — DATE 6/27/07
DEPARTMENT OF TRANSPORTATION, LANDSCAPE MAINTENANCE — DATE 6/27/07
SURVEY SECTION — DATE

DEPARTMENT OF PUBLIC WORKS
SAN JOSE, CALIFORNIA
CITY OF SAN JOSE CAPITOL OF SILICON VALLEY
APPROVED BY KATY ALLEN DIRECTOR OF PUBLIC WORKS

CONTROLLER NOTES:

1. CONTROLLER SHALL BE INSTALLED AT LOCATION AS SHOWN ON THE IRRIGATION PLAN WITHIN THE PUBLIC RIGHT-OF-WAY. REFER TO THE ELECTRICAL ENGINEERING PLANS FOR THE POINT OF CONNECTION TO THE POWER SOURCE AND ROUTING OF CONDUITS.
2. ALL CABLES AND CONDUCTORS MUST BE INSTALLED IN CONDUIT AND SEALED PER NOTE 7. EXTEND CONDUITS ALONG WITH APPROPRIATE CABLES/CONDUCTORS TO LOCATIONS SHOWN ON PLANS. REMOTE CONTROL WIRES ARE DIRECT BURIAL, WITH THE EXCEPTION OF UNDER PAVED AREAS WHERE THEY ARE INSTALLED IN SLEEVES AS SHOWN IN REMOTE CONTROL VALVE DETAIL.
3. SEE SITE PLAN FOR ORIENTATION AND ROUTING OF CONDUITS.
4. IRRIGATION CONTROLLER, ENCLOSURE AND ASSOCIATED EQUIPMENT SHALL BE MANUFACTURED, AND ASSEMBLED BY CALSENSE. CONTACT CALSENSE LOCAL REPRESENTATIVE JIM JORDAN AT (925) 577-0534. SUPPLIED BY JOHN DEERE LANDSCAPES AT (408) 295-3376 OR EWING IRRIGATION AT (408) 436-8848.
5. ALL CONDUCTORS AND WIRING SHALL BE NEATLY ARRANGED AND ORDERED SO THAT CLEAR ACCESS TO ALL EQUIPMENT IS MAINTAINED.
6. PROVIDE ENGRAVED SCREW-ON PHENOLIC NAMEPLATE ON DEVICE BOX INDICATING LOCATION AND NAME OF ORIGINATING ELECTRICAL PANEL AND BRANCH CIRCUIT IDENTIFICATION NUMBER.
7. CONTRACTOR SHALL SEAL OFF ENDS OF CONDUIT AFTER INSTALLING CONDUCTORS/WIRES WITH DUCT SEAL, AND CAP ENDS OF ALL SPARE CONDUITS. EXTEND SPARE CONDUITS 24" BEYOND FOUNDATION AND CAP WITH BRASS CAP.
8. ALL CABLES AND CONDUCTORS MUST BE INSTALLED IN CONDUIT AND SEALED PER NOTE 7. EXTEND CONDUITS ALONG WITH APPROPRIATE CABLES/CONDUCTORS TO LOCATIONS SHOWN ON PLANS. REMOTE CONTROL WIRES ARE DIRECT BURIAL, WITH THE EXCEPTION OF UNDER PAVED AREAS WHERE THEY ARE INSTALLED IN SLEEVES.
9. PROVIDE SPARE REMOTE CONTROL VALVE WIRES FROM CONTROLLER TO #6 PULLBOX. PROVIDE SPARE WIRES IN A QUANTITY TO ALLOW FOR THE FUTURE INPLEMENTATION OF FULL STATION CAPACITY. CAP SPARE WIRES WITH WIRE NUTS WRAPPED WITH VINYL ELECTRICAL TAPE. LABEL "SPARE". SEE IRRIGATION SPECIFICATIONS.
10. CONTROLLER ASSEMBLY TO BE COVERED BY CALSENSE'S 10 YEAR WARRANTY.
11. RADIO REMOTE TRANSMITTER REQUIRED FOR ANY PROJECT OVER 1,000 FT. IN LENGTH.
12. CONTRACTOR SHALL PROVIDE RECYCLED WATER MARKING DECALS, TAGS AND SIGNS FOR IRRIGATION SYSTEMS DESIGNED FOR AN IMMEDIATE CONNECTION TO RECYCLED WATER ONLY OR AS OTHERWISE INDICATED ON PLANS.
13. CONTRACTOR TO FURNISH, INSTALL, AND TEST COMPLETE CALSENSE ET2000e IRRIGATION CONTROLLER ASSEMBLY CONSISTING OF CONTROLLER(S), ENCLOSURE, TERMINAL INTERFACE BOARDS, 120 VOLT GFI OUTLET, ON/OFF SWITCH, CABLING, TRANSFORMERS, SURGE ARRESTERS, AND ALL OTHER ITEMS SPECIFIED. CONTRACTOR TO PROVIDE CONCRETE FOOTING.
14. ALSO SEE SHEET 4 FOR OTHER IRRIGATION SYSTEM COMPONENTS AND MATERIALS REQUIRED FOR PROJECT.
15. WHERE RADIO COMMUNICATION EQUIPMENT IS SPECIFIED, PROVIDE LOW POWER RADIO UNITS COMPLIANT WITH THE 12.5 KHZ NARROWBAND STANDARDS. THE FOLLOWING CHANNELS ON THE UHF FREQUENCY BAND ARE LICENSED FOR USE IN THE CITY OF SAN JOSE: 453.8875 MHZ AND 458.8875 MHZ.
16. UPON COMPLETION OF INSTALLATION, CONTACT CALSENSE REPRESENTATIVE AT 925-577-0534 TO PERFORM A SITE VISIT TO VERIFY THE SYSTEM HAS BEEN INSTALLED PER MANUFACTURER'S INSTRUCTIONS. THE SYSTEM WILL NOT BE ACCEPTED UNTIL THE REPRESENTATIVE HAS INDICATED THAT THE SYSTEM HAS BEEN INSTALLED CORRECTLY AND IS OPERATING SATISFACTORILY. CONTRACTOR TO PROVIDE PROGRAMMING OF CONTROLLER, WITH TRAINING (AT NO CHARGE) FROM CALSENSE.
17. CONTRACTOR SHALL PROVIDE TWO KEYS FOR THE CONTROLLER ENCLOSURE, AND SECURE THE ENCLOSURE WITH THE LOCK DURING CONSTRUCTION AND MAINTENANCE. LOCK SHALL BE KEYED TO THE CITY NUMBER ASSIGNED BY DEPARTMENT OF TRANSPORTATION. IMMEDIATELY PRIOR TO PROJECT ACCEPTANCE, THE CONTRACTOR SHALL TURN TH KEYS OVER TO THE ENGINEER.
18. EXTEND FLOW METER AND / MASTER VALVE WIRES IN 1" SCHEDULE 40 PVC CONDUIT TO FLOW SENSOR / MASTER VALVE. REFER TO FLOW SENSOR / MASTER VALVE DETAIL.

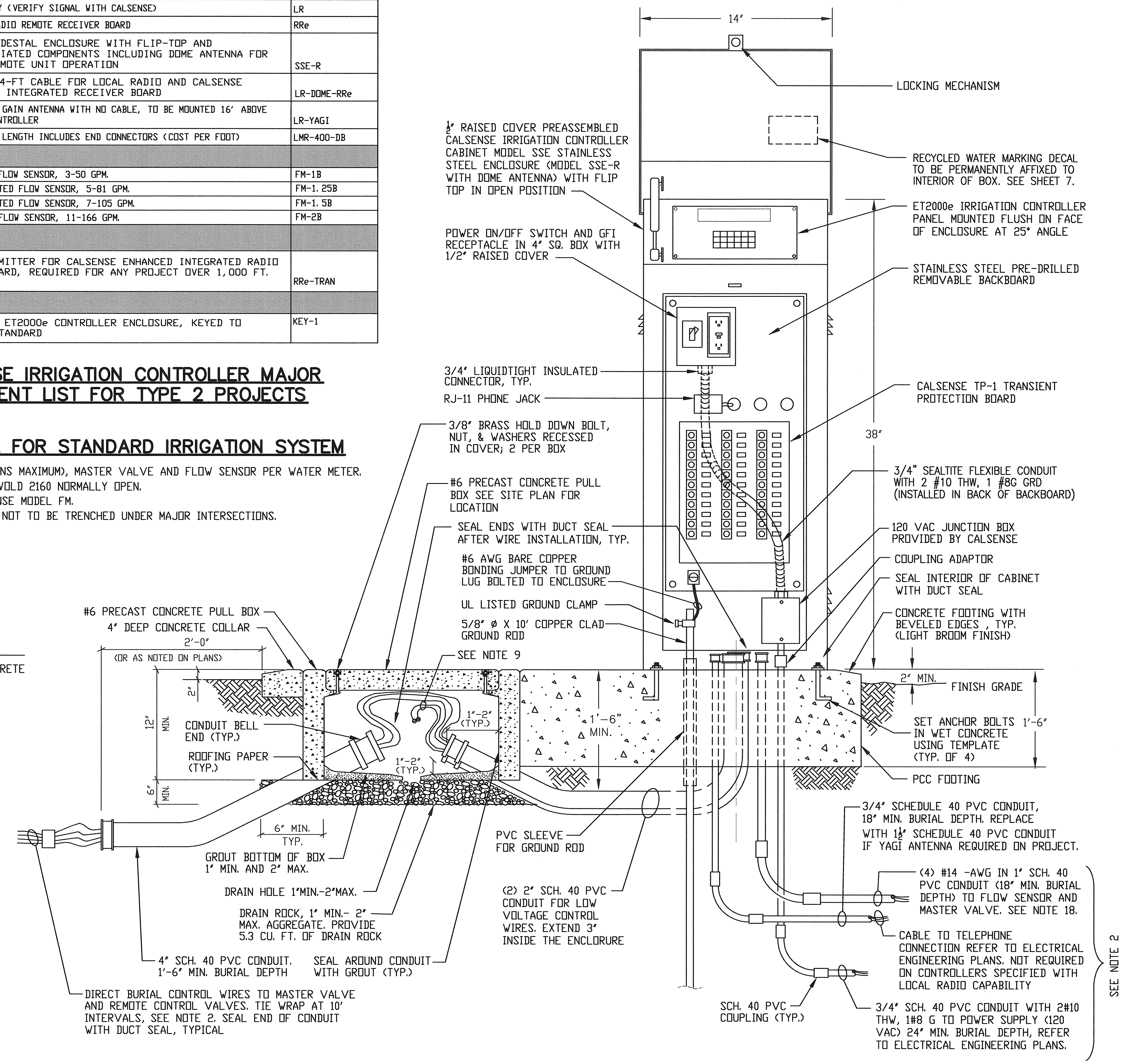
CALSENSE IRRIGATION CONTROLLER ET2000e

REQ'D FOR PROJECT		MAJOR COMPONENT DESCRIPTION	PART NUMBER
YES	NO		
		CONTROLLER AND OPTIONS	
X		ENHANCED ET AND MOISTURE DRIVEN IRRIGATION CONTROLLER CONTROLLER STATION QTY.: 8 12 16 24 32 40 OR 48 (CIRCLE ONE)	ET2000e
		PHONE COMMUNICATION CAPABILITY	R
		LOCAL RADIO CAPABILITY (VERIFY SIGNAL WITH CALSENSE)	LR
X		ENHANCED INTEGRATED RADIO REMOTE RECEIVER BOARD	RRe
X		STAINLESS STEEL PEDESTAL ENCLOSURE WITH FLIP-TOP AND PREASSEMBLED ASSOCIATED COMPONENTS INCLUDING DOME ANTENNA FOR LOCAL RADIO AND REMOTE UNIT OPERATION	SSE-R
		DOME ANTENNA WITH 4-FT CABLE FOR LOCAL RADIO AND CALSENSE ENHANCED MODEL RRe INTEGRATED RECEIVER BOARD	LR-DOME-RRe
	X	LOCAL RADIO YAGI HIGH GAIN ANTENNA WITH NO CABLE, TO BE MOUNTED 16' ABOVE GRADE, ADJACENT TO CONTROLLER	LR-YAGI
	X	ANTENNA CABLE, CUSTOM LENGTH INCLUDES END CONNECTORS (COST PER FOOT)	LMR-400-DB
		FLOW SENSOR	
		1" BRASS TEE MOUNTED FLOW SENSOR, 3-50 GPM.	FM-1B
		1-1/4" BRASS TEE MOUNTED FLOW SENSOR, 5-81 GPM.	FM-1.25B
		1-1/2" BRASS TEE MOUNTED FLOW SENSOR, 7-105 GPM.	FM-1.5B
		2" BRASS TEE MOUNTED FLOW SENSOR, 11-166 GPM.	FM-2B
		RADIO REMOTE UNIT	
		RADIO REMOTE TRANSMITTER FOR CALSENSE ENHANCED INTEGRATED RADIO REMOTE RECEIVER BOARD, REQUIRED FOR ANY PROJECT OVER 1,000 FT. IN LENGTH	RRe-TRAN
		MISCELLANEOUS	
X		SET OF 10 KEYS FOR ET2000e CONTROLLER ENCLOSURE, KEYED TO CITY OF SAN JOSE STANDARD	KEY-1

(2) CALSENSE IRRIGATION CONTROLLER MAJOR COMPONENT LIST FOR TYPE 2 PROJECTS

DESIGN CRITERIA FOR STANDARD IRRIGATION SYSTEM

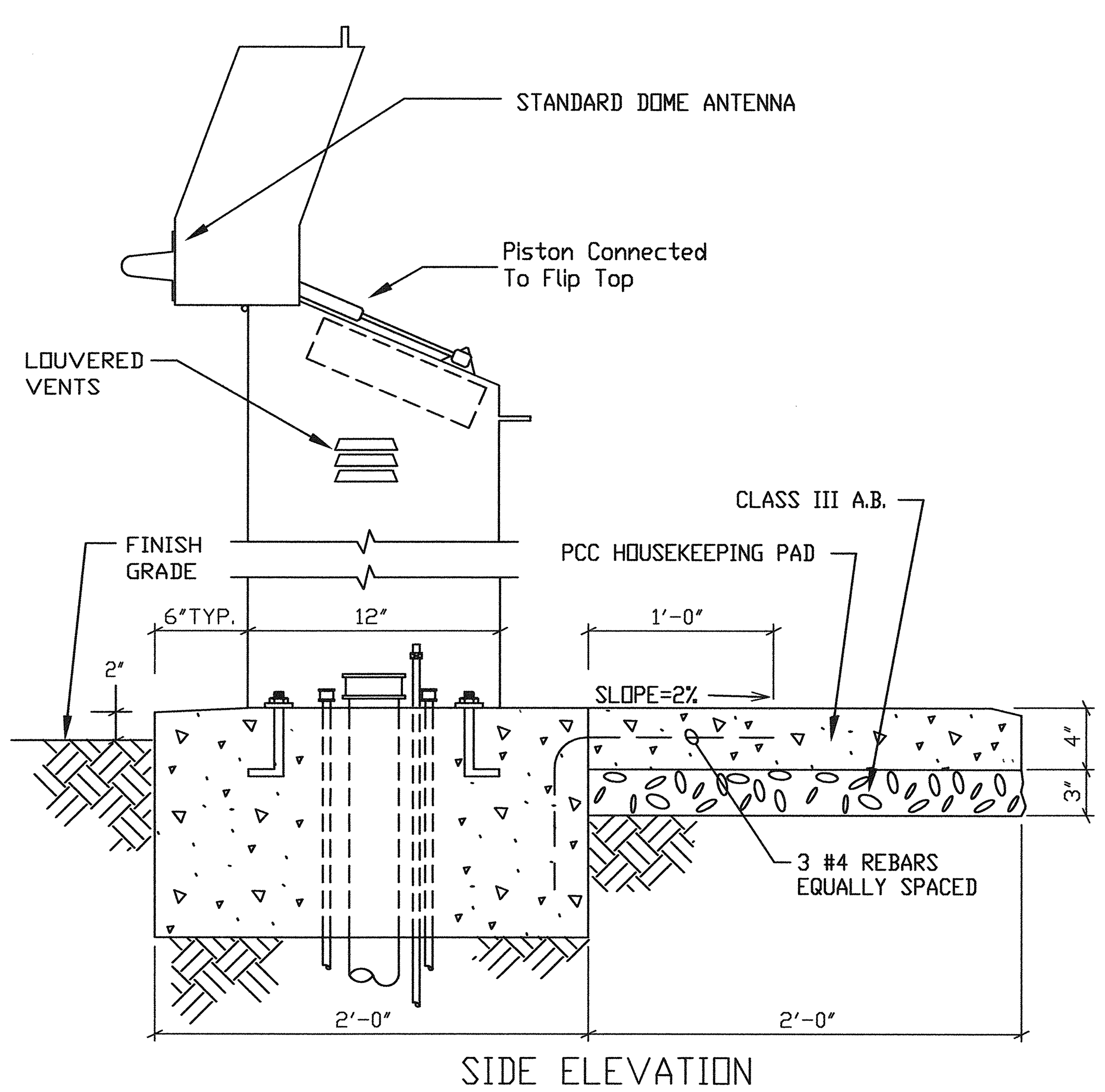
1. ONE CONTROLLER (48 STATIONS MAXIMUM), MASTER VALVE AND FLOW SENSOR PER WATER METER.
2. MASTER VALVE TO BE GRISWOLD 2160 NORMALLY OPEN.
3. FLOW SENSOR TO BE CALSENSE MODEL FM.
4. IRRIGATION MAINLINE SHALL NOT TO BE TRENCHED UNDER MAJOR INTERSECTIONS.



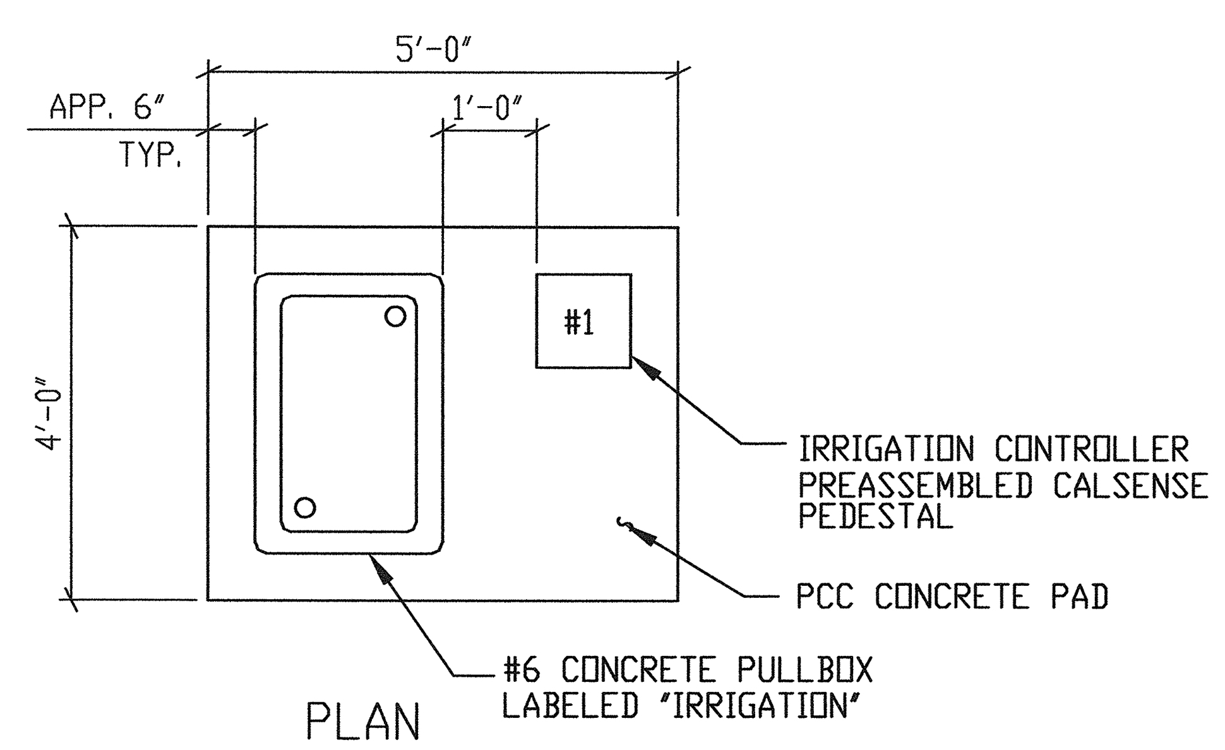
(1) IRRIGATION CONTROLLER FRONT SECTION
NOT TO SCALE

ABBREVIATIONS

A.B.	AGGREGATE BASE	PCC	PORTLAND CEMENT CONCRETE
APP.	APPROXIMATELY	PVC	POLYVINYL CHLORIDE
G	GROUND	SCH.	SCHEDULE
MIN.	MINIMUM	TYP.	TYPICAL
MAX.	MAXIMUM	VAC	VOLTS AC



(4) IRRIGATION CONTROLLER SIDE SECTION
NOT TO SCALE



(3) SINGLE CONTROLLER CONCRETE PAD LAYOUT
NOT TO SCALE

PROJECT NAME:

SHEET TITLE:

STANDARD LANDSCAPE CALSENSE IRRIGATION CONTROLLER FOR TYPE 2 CITY STREETSCAPE PROJECTS

	REVISIONS	DESIGN BY	DESIGN DATE	CITY APPR.	APPR. DATE
◇					

STAMP & SIGNATURE BY CALIFORNIA LICENSED LANDSCAPE ARCHITECT:

CONSULTANT'S NAME, ADDRESS & PHONE:

PERMIT #
PROJECT #

PROJECT INSPECTOR:
VM:

PROJECT ENGINEER — [signature] 6/29/07 DATE
LANDSCAPE DESIGN REVIEW — GABRIELLE WILDER, L.A.E. 6/27/07 DATE
DEPARTMENT OF TRANSPORTATION, LANDSCAPE MAINTENANCE — [signature] 6/25/2007 DATE
DEPARTMENT OF TRANSPORTATION, LANDSCAPE MAINTENANCE — [signature] 6/27/07 DATE
MUNICIPAL WATER, SBWR — Timothy S.N. Town 6-21-07 DATE
SURVEY SECTION — DATE

DEPARTMENT OF PUBLIC WORKS
SAN JOSE, CALIFORNIA

CITY OF SAN JOSE
CAPITOL OF SILICON VALLEY

APPROVED BY KATY ALLEN
DIRECTOR OF PUBLIC WORKS

SHEET 6 OF 10

FRONT BACK

WARNING TAG–BACKGROUND PURPLE (PANTONE 512) WITH BLACK LETTERING BY CHRISTY ID–STD–P2–RC1P2 OR EQUAL.
NOTE: CONTRACTOR TO INSTALL RECYCLED WATER WARNING TAGS, LABELS AND SIGNS FOR IRRIGATION SYSTEMS CONNECTED TO RECYCLED WATER OR AS INDICATED ON PLANS.

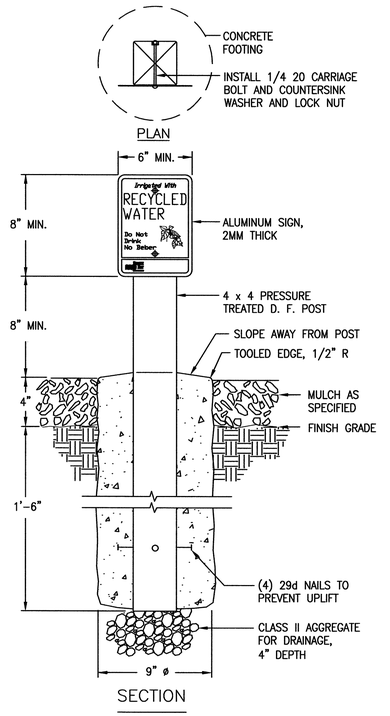
SECTION

2 RECYCLED WATER IDENTIFICATION TAG

FRONT VIEW

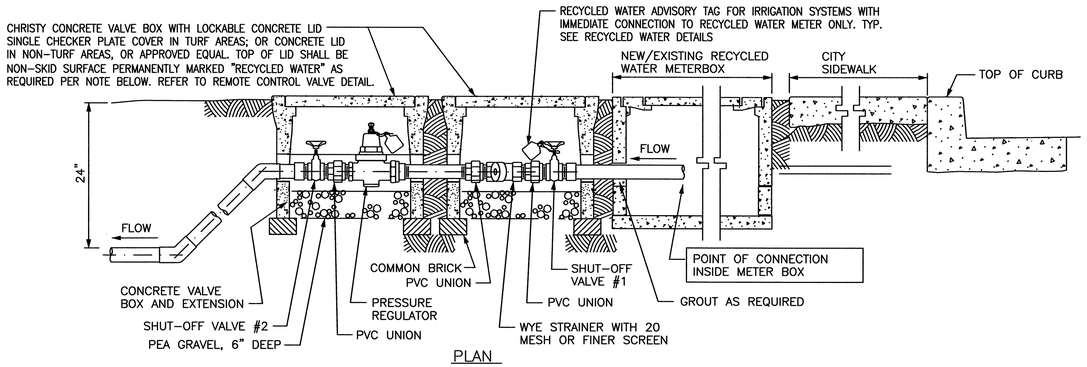
NOTE: USE T. CHRISTY ENTERPRISES, INC. CATALOG PART NO. 4100 OR EQUAL.

3 RECYCLED WATER WARNING DECAL FOR CONTROLLER ENCLOSURE
NTS



NOTES: 1. 6" x 8" RECYCLED WATER METAL SIGN AVAILABLE AT: SAFEWAY SIGN CO. (800) 637–7233 www.safewaysign.com, PART No. SR SAN JOSE–024 OR EQUAL
2. INSTALL IN LOCATIONS NOTED ON PLANS.

1 PROJECT ADVISORY SIGN
NTS



PLAN

NOTES:
1. REQUIRED RECYCLED WATER IRRIGATION SYSTEM COMPONENTS FOR NEW WORK TO BE INSTALLED BY CONTRACTOR AS CLOSE AS PRACTICAL TO EACH OTHER AND DOWNSTREAM SIDE OF RECYCLED WATER SERVICE CONNECTION.
2. ATTACH RECYCLED WATER IDENTIFICATION TAGS AND/OR LABELS ON ALL DEVICES.
3. THE NUMBER OF BOXES SHOWN ARE SUGGESTIONS. SPECIFY THE APPROPRIATE NUMBER OF BOXES NECESSARY TO HOUSE THESE COMPONENTS PER SITE CONDITIONS.

RECYCLED WATER LID IDENTIFICATION NOTE:
FOR RECYCLED WATER SYSTEMS, CONCRETE LIDS MUST HAVE THE MOLDED–IN MARKING FROM THE FACTORY, "RECYCLED WATER", AND CAST IRON AND METAL CHECKER PLATE LIDS MUST HAVE THE BEAD–WELDED OR PERMANENTLY STAMPED MARKING, "RECYCLED WATER".

4 STRAINER/PRESSURE REGULATOR FOR IRRIGATION SYSTEMS WITH IMMEDIATE CONNECTION TO RECYCLED WATER METER
N.T.S.

SOUTH BAY WATER RECYCLING (SBWR) STANDARD NOTES FOR ON-SITE RECYCLED WATER IRRIGATION SYSTEMS:

1. PRIOR TO RECEIVING RECYCLED WATER, THE SITE MUST BE PERMITTED BY SOUTH BAY WATER RECYCLING (SBWR). CONTRACTOR SHALL CONTACT SBWR AT (408) 277–3671 AT LEAST 90 CALENDAR DAYS PRIOR TO THE DATE THAT RECYCLED WATER IS NEEDED TO INITIATE THE PROCESS. A PERMIT WILL BE GRANTED AFTER:
   - o INSPECTION BY SBWR HAS BEEN COMPLETED SHOWING CONFORMANCE WITH SBWR RULES AND REGULATIONS;
   - o A FINAL ON–SITE INSPECTION HAS BEEN CONDUCTED TO CONFIRM THAT ALL REQUIREMENTS HAVE BEEN MET;
   - o SITE HAS PASSED REQUIRED CROSS–CONNECTION TEST PERFORMED BY A CERTIFIED AWWA CROSS–CONNECTION SPECIALIST;
   - o A SBWR–CERTIFIED SITE SUPERVISOR, WHO WILL BE RESPONSIBLE FOR THE USE OF RECYCLED WATER ON THE SITE, HAS BEEN IDENTIFIED.

   THE CITY'S REPRESENTATIVE MUST ALSO COMPLETE A SITE SUPERVISOR TRAINING CLASS OFFERED BY SBWR IN ORDER TO RECEIVE A PERMANENT PERMIT. IN THE INTERIM BETWEEN CONNECTION AND TRAINING, THE CITY'S REPRESENTATIVE WILL RECEIVE TEMPORARY RECYCLED WATER PERMIT.

   CONTACT SBWR AT (408) 277–3671 FOR FURTHER INFORMATION.
2. ALL WORK SHALL CONFORM TO EXISTING REGULATIONS INCLUDING BUT NOT LIMITED TO:
   - o SOUTH BAY WATER RECYCLING (SBWR) RULES AND REGULATIONS
   - o DEPARTMENT OF HEALTH SERVICES REGULATIONS
3. CHANGES MADE TO THE APPROVED IRRIGATION PLANS SHALL BE SUBMITTED TO SBWR FOR REVIEW AND APPROVAL AT LEAST 2 WEEKS PRIOR TO START OF CONSTRUCTION.
4. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND ATTENDING A PRE–CONSTRUCTION MEETING WITH THE SBWR INSPECTOR AND THE CITY'S PROJECT INSPECTOR. MEETING MUST OCCUR AT LEAST TWO DAYS PRIOR TO START OF CONSTRUCTION. CONTACT SBWR AT (408) 277–3671 AND CITY'S PROJECT INSPECTOR AT TELEPHONE NUMBER LISTED BELOW TO SCHEDULE MEETING.
5. NOTIFY SBWR INSPECTOR A MINIMUM OF AT LEAST 24 HRS BEFORE WORK BEGINS. SBWR INSPECTOR MUST INSPECT AND/OR VERIFY:
   - o PRESENCE OF PROPER BACKFLOW PREVENTION AT ALL POTABLE POINTS OF CONNECTION;
   - o NEW UNDERGROUND PIPING (LABELING, CLEARANCES, BURIAL DEPTH, SLEEVING);
   - o INSTALLATION OF SIGNS, TAGS, AND CONTROLLER DECALS;
   - o REQUIRED TEMPORARY CONNECTION TO POTABLE WATER SERVICE; IN MOST CASES, THE SITE'S IRRIGATION SYSTEM MUST BE CONNECTED TO A TEMPORARY SOURCE OF POTABLE WATER IN ORDER TO CONDUCT REQUIRED CROSS–CONNECTION TEST;
   - o SITE PASSED REQUIRED CROSS–CONNECTION TEST PERFORMED BY A CERTIFIED AWWA CROSS–CONNECTION SPECIALIST;
   - o NEW METER INSTALLATION – PRIOR TO RECEIVING RECYCLED WATER, SBWR INSPECTOR MUST INSPECT THE DISCONNECTION OF THE SITE'S IRRIGATION SYSTEM FROM THE TEMPORARY POTABLE WATER SUPPLY, AND THEN INSPECT THE CONNECTION OF THE SYSTEM TO THE RECYCLED WATER METER.
6. NO CROSS–CONNECTIONS BETWEEN THE POTABLE AND RECYCLED WATER SYSTEMS ARE PERMITTED.
7. ALL ON–SITE BURIED RECYCLED WATER PIPING SHALL BE IDENTIFIED BY ONE OF THE FOLLOWING METHODS:
   - o USING PURPLE–COLORED PVC PIPE WITH CONTINUOUS WORDING: "CAUTION – RECYCLED WATER" PRINTED ON OPPOSITE SIDES OF THE PIPE; PIPE SHALL BE LAID WITH WORDING FACING UPWARDS.
   - o MARKING TAPE WITH A MINIMUM WIDTH OF 3 INCHES READING: "CAUTION – RECYCLED WATER" (IN BLACK OR WHITE LETTERING ON PURPLE BACKGROUND) SHALL RUN CONTINUOUSLY ON TOP OF PIPING AND SHALL BE ATTACHED TO PIPING WITH PLASTIC TAPE BANDED AROUND THE MARKING TAPE AND THE PIPE EVERY 5 FEET ON CENTER.
   - o BLUE–COLORED PVC PIPE SHALL NOT BE USED UNLESS THE BLUE COLOR IS COMPLETELY OBSCURED BY ENCASEMENT OF THE PIPE WITH PURPLE POLYETHYLENE WRAP OR OTHER METHODS APPROVED BY SBWR.
8. PVC PIPE: CONSTANT–PRESSURE MAINLINE PIPING 1 1/2 INCHES AND SMALLER SHALL BE SCHEDULE 40; CONSTANT–PRESSURE MAINLINE PIPING 2 INCHES AND LARGER SHALL BE CLASS 315 OR C900 CLASS 200 DR 14; INTERMITTENT–PRESSURE LATERAL PIPING SHALL BE SCHEDULE 40. COPPER PIPE SHALL BE TYPE "K".
9. ALL ON–SITE RECYCLED WATER PIPING SHALL BE BURIED TO A MINIMUM DEPTH FROM FINISHED GRADE TO TOP OF PIPE (MINIMUM COVER) OF:
   - o PRESSURIZED MAINLINES 24 INCHES
   - o INTERMITTENT–PRESSURE LATERAL LINES 18 INCHES
10. ALL RECYCLED WATER PIPING OTHER THAN PVC PIPING WITH SOLVENT WELDED JOINTS SHALL BE PROTECTED AGAINST MOVEMENT WITH THRUST BLOCKS OR RESTRAINED JOINTS OR OTHER METHODS APPROVED BY SBWR. SEE DETAIL ON SHEET 3.
11. MAINTAIN A 10–FOOT HORIZONTAL SEPARATION BETWEEN BURIED PRESSURIZED RECYCLED WATER IRRIGATION PIPING AND BURIED POTABLE WATER PIPING UNLESS OTHERWISE NOTED. AT PIPE CROSSINGS, BURIED PRESSURIZED RECYCLED WATER IRRIGATION PIPING MUST BE 12 INCHES BELOW POTABLE WATER LINES. PRESSURIZED RECYCLED WATER PIPELINES ARE ALLOWED OVER POTABLE WATER PIPELINES WITH A MINIMUM OF 12 INCHES VERTICAL SEPARATION IF A FULL STANDARD PIPE LENGTH IS CENTERED OVER THE CROSSING, OR THE RECYCLED WATER PIPELINE IS INSTALLED IN A PIPE SLEEVE WHICH EXTENDS A MINIMUM OF 10 FEET ON EITHER SIDE OF THE POTABLE WATER PIPING. INTERMITTENTLY PRESSURIZED IRRIGATION LATERALS MAY BE LOCATED A MINIMUM OF 12 INCHES ABOVE POTABLE WATER PIPELINES WITHOUT SLEEVING.
12. ALL RECYCLED WATER SYSTEM REMOTE CONTROL VALVES, MASTER VALVES, FLOW SENSORS, GATE VALVES, BALL VALVES, QUICK COUPLING VALVES, STRAINERS, AND PRESSURE–REGULATING VALVES SHALL BE INSTALLED BELOW GRADE IN VALVE BOXES. CONCRETE LIDS MUST HAVE THE MOLDED–IN MARKING FROM TH FACTORY, "RECYCLED WATER", AND CAST IRON AND METAL CHECKER PLATE LIDS MUST HAVE THE BEAD–WELDED OR PERMANENTLY STAMPED MAKING, "RECYCLED WATER".
13. QUICK–COUPLING VALVES SHALL BE PER DETAIL ON SHEET 3.
14. NO HOSE BIBS ARE ALLOWED ON THE RECYCLED WATER IRRIGATION SYSTEM. ANY EXTERIOR HOSE BIBS SERVED WITH POTABLE WATER MUST BE LABELED PER SBWR STANDARD DETAILS.
15. ALL RECYCLED WATER METERS, DEVICES, AND VALVES – E.G. GATE VALVES, IRRIGATION CONTROLLERS, REMOTE CONTROL VALVES, PRESSURE REGULATING VALVES, QUICK COUPLING VALVES, ETC. – SHALL BE TAGGED PER SBWR STANDARD DETAILS.
16. LABEL ALL POTABLE WATER METERS AND ABOVE GROUND POTABLE WATER PIPES/DEVICES (BACKFLOW PREVENTERS, HOSE BIBS, ETC.) WITH TAGS OR LABELS READING: "POTABLE WATER" IN BLACK LETTERS ON BLUE BACKGROUND, PER SBWR DETAILS.
17. ALL RECYCLED WATER IRRIGATION SYSTEMS SHALL HAVE THE FOLLOWING:
   - o A WYE STRAINER (WITH A 20–MESH OR FINER SCREEN) INSTALLED AS CLOSE AS PRACTICABLE TO THE RECYCLED WATER METER BOX.
   - o A PRESSURE REGULATING VALVE INSTALLED IMMEDIATELY DOWNSTREAM OF THE STRAINER (UNLESS OTHERWISE DIRECTED BY SBWR).
   - o THESE COMPONENTS SHALL BE INSTALLED WITH ISOLATION VALVES TO FACILITATE MAINTENANCE.
18. RECYCLED WATER ADVISORY SIGNS SHALL BE PER SBWR STANDARD DETAILS AND SHALL BE POSTED PER LOCATION SHOWN ON IRRIGATION PLANS.
19. INSTALLATION OF DIRECT INJECTION SYSTEMS ON THE RECYCLED WATER IRRIGATION SYSTEM IS NOT PERMITTED.
20. NO DRINKING FOUNTAINS OR EATING AREAS ARE ALLOWED IN THE APPROVED RECYCLED WATER USE AREA UNLESS ADEQUATELY PROTECTED FROM OVERSPRAY.
21. ALL RECYCLED WATER METERS WILL BE SET BY THE LOCAL WATER UTILITY AFTER:
   - o THE SITE'S OWNER, DEVELOPER, OR CONTRACTOR HAS APPLIED FOR RECYCLED WATER SERVICE WITH THE LOCAL WATER UTILITY, THE WATER SERVICE AGREEMENT HAS BEEN APPROVED, AND ALL APPLICABLE FEES HAVE BEEN PAID.
   - o THE WATER UTILITY HAS RECEIVED AUTHORIZATION FROM SBWR TO SET RECYCLED WATER METERS.
22. NO OVERSPRAY OR RUNOFF OF RECYCLED WATER IS ALLOWED ON ANY NON–APPROVED USE AREA. PONDING OF RECYCLED WATER DUE TO IRRIGATION IS NOT ALLOWED IN ANY AREA. UPON RECEIVING RECYCLED WATER, THE ON–SITE RECYCLED WATER IRRIGATION SYSTEM MUST PASS A COVERAGE TEST PERFORMED BY SBWR INSPECTOR.
23. CONTRACTOR SHALL SUBMIT AS–BUILT IRRIGATION PLANS TO SBWR.

PROJECT NAME:

SHEET TITLE: **STANDARD LANDSCAPE RECYCLED WATER IRRIGATION DETAILS & NOTES FOR CITY STREETSCAPE PROJECTS WITH IMMEDIATE CONNECT TO RECYCLED WATER**

	REVISIONS	DESIGN BY	DESIGN DATE	CITY APPR.	APPR. DATE

STAMP & SIGNATURE BY CALIFORNIA LICENSED LANDSCAPE ARCHITECT:

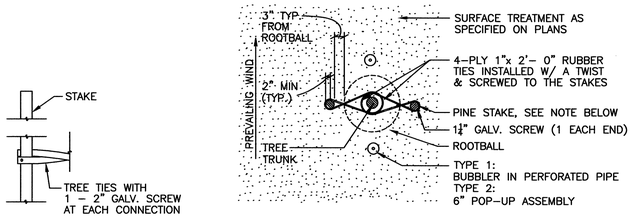
CONSULTANT'S NAME, ADDRESS & PHONE:

PERMIT #
PROJECT #
PROJECT INSPECTOR:
VM:

PROJECT ENGINEER: 6/29/07 DATE
DEPARTMENT OF TRANSPORTATION, LANDSCAPE MAINTENANCE: 6/25/2007 DATE
MUNICIPAL WATER, SBWR: Timothy S.N. Town 6-27-07 DATE

LANDSCAPE DESIGN REVIEW: 6/27/07 DATE
DEPARTMENT OF TRANSPORTATION, LANDSCAPE MAINTENANCE: 6/27/07 DATE
SURVEY SECTION: DATE

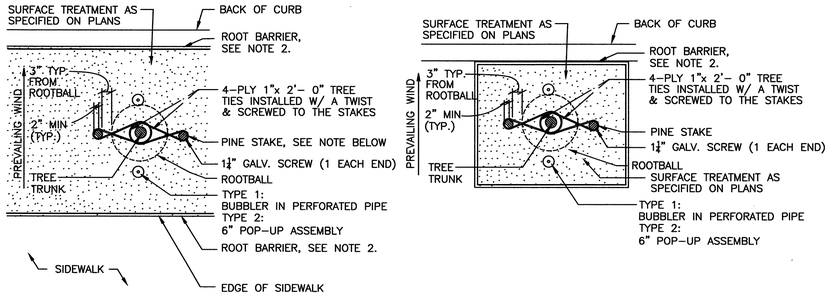
DEPARTMENT OF PUBLIC WORKS
SAN JOSE, CALIFORNIA
CITY OF SAN JOSE CAPITOL OF SILICON VALLEY
APPROVED BY KATY ALLEN DIRECTOR OF PUBLIC WORKS



* TREE STAKES & TIES TO BE INSTALLED PERPENDICULAR TO DIRECTION OF PREVALING WIND.

DETAIL

PLAN



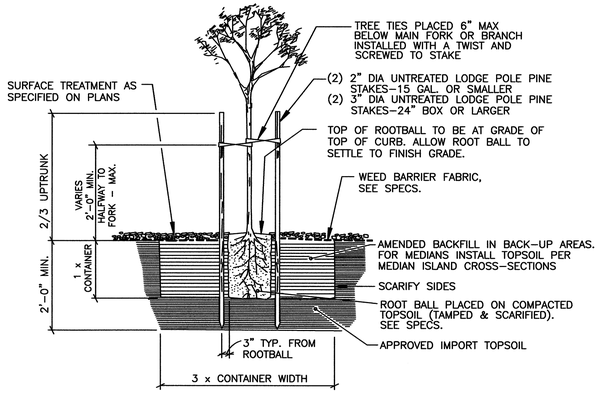
PLAN

PARKSTRIP

PLAN

TREE WELL

NOTE: TREE STAKES & TIES TO BE INSTALLED PERPENDICULAR TO DIRECTION OF PREVALING WIND.



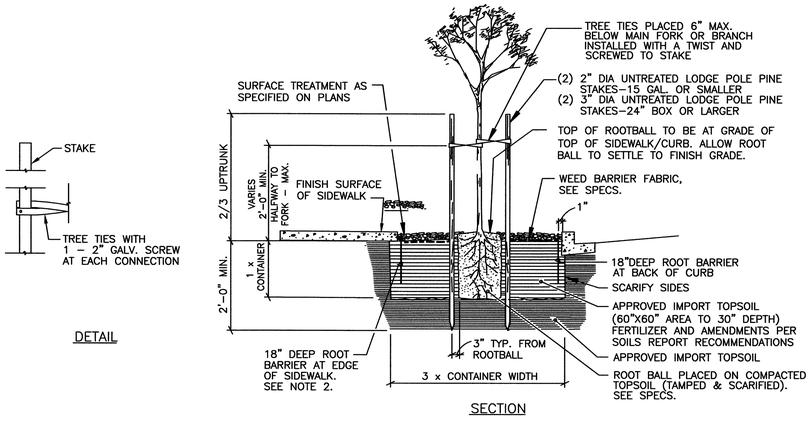
SECTION

SECTION FOR MEDIANS AND BACK–UPS

NOTES:

1. REFER TO DETAIL 6, SHEET 8 , FOR BUBBLER DETAIL.
2. INSTALL ROOT BARRIER PER SPECIFICATIONS. INSTALL 1/2" MAXIMUM ABOVE FINISH GRADE AND COVER WITH SPECIFIED WOOD OR GRAVEL MULCH IN MEDIAN ISLANDS OR DECOMPOSED GRANITE IN PARKSTRIPS.
3. THE HEIGHT OF THE STAKES SHALL NOT INTERFERE WITH TREE BRANCHES IN ANY WAY. TRIM THE TOPS OF STAKES AS DIRECTED BY THE ENGINEER.
4. ROOTBALL TO BE THROUGHLY WATERED IMMEDIATELY AFTER PLANTING, AND KEPT MOIST AS REQUIRED TO ENSURE PLANT HEALTH DURING CONSTRUCTION AND MAINTENANCE PERIODS.

5 TREE PLANTING & STAKING FOR MEDIANS
N.T.S.



DETAIL

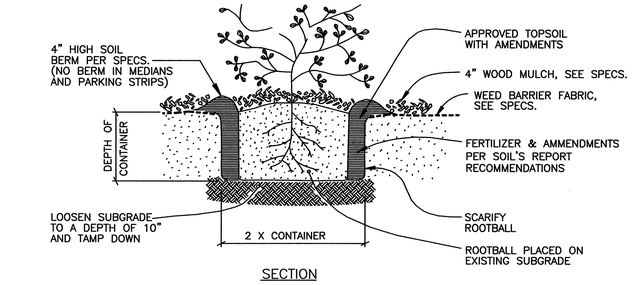
SECTION

SECTION FOR PARK STRIPS AND TREE WELLS

NOTES:

1. REFER TO DETAIL 6, SHEET 8 , FOR BUBBLER DETAIL.
2. INSTALL ROOT BARRIER PER SPECIFICATIONS. INSTALL 1/2" MAXIMUM ABOVE FINISH GRADE AND COVER WITH SPECIFIED WOOD OR GRAVEL MULCH IN MEDIAN ISLANDS OR DECOMPOSED GRANITE IN PARKSTRIPS.
3. THE HEIGHT OF THE STAKES SHALL NOT INTERFERE WITH TREE BRANCHES IN ANY WAY. TRIM THE TOPS OF STAKES AS DIRECTED BY THE ENGINEER.
4. ROOTBALL TO BE THROUGHLY WATERED IMMEDIATELY AFTER PLANTING, AND KEPT MOIST AS REQUIRED TO ENSURE PLANT HEALTH DURING CONSTRUCTION AND MAINTENANCE PERIODS.

4 TREE PLANTING & STAKING FOR PARK STRIPS & TREE WELLS
N.T.S.

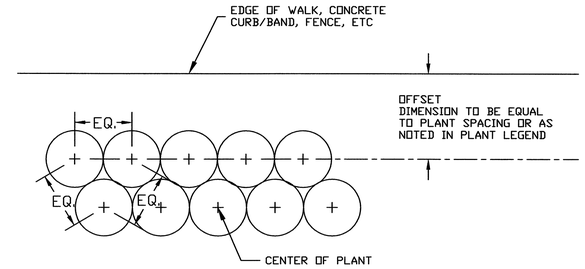


SECTION

NOTE:

1. ROOTBALL TO BE THROUGHLY WATERED IMMEDIATELY AFTER PLANTING, AND KEPT MOIST BUT NOT OVER–WATERED DURING CONSTRUCTION AND MAINTENANCE PERIODS.

1 VINE, GROUND COVER AND SHRUB PLANTING WITH WOOD MULCH
N.T.S.



NOTES
1. SEE PLANTING PLAN SHEETS FOR PLANT SPACING.
2. PLANTING OF TREES AND SHRUBS IS IN A RANDOM PATTERN AND ARE NOT TO BE INSTALLED WITHOUT THE CITY ENGINEER'S AND DISTRICT ARBORIST'S APPROVAL. THE DISTANCE A SHRUB IS TO BE PLANTED FROM A FENCE IS EQUAL TO THE DIAMETER OF THE MATURE PLANT.

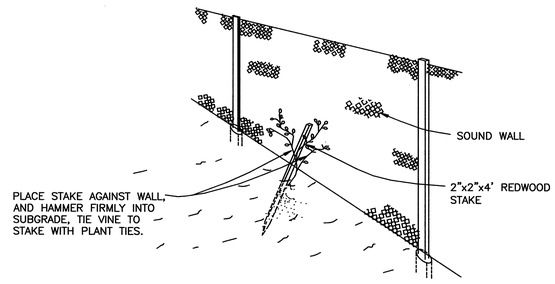
2 SHRUB SPACING DETAIL
N.T.S.

PLANTING LIST

SYMBOL	BOTANICAL NAME/COMMON NAME	QUANTITY	SPACING	MIN. HEIGHT	MIN. SPREAD	MIN. TRUNK CALIPER	OFFSET FROM HARDSCAPE

NOTE: CONSULTANT TO COPY ON PLANTING PLAN AND MODIFY AS REQUIRED.

6 TYPICAL PLANT LIST
N.T.S.



NOTE: PLANT CLINGING VINE SPECIES ONLY UNLESS TRELLIS STRUCTURE IS PROVIDED.

PERSPECTIVE

3 VINE STAKING
N.T.S.

PROJECT NAME:

SHEET TITLE:

STANDARD LANDSCAPE PLANTING DETAILS FOR CITY STREETSCAPE PROJECTS

	REVISIONS	DESIGN BY	DESIGN DATE	CITY APPR.	APPR. DATE
◇					

STAMP & SIGNATURE BY CALIFORNIA LICENSED LANDSCAPE ARCHITECT:

CONSULTANT'S NAME, ADDRESS & PHONE:

PERMIT #
PROJECT #

PROJECT INSPECTOR:
VM:

PROJECT ENGINEER — DATE 6/29/07
DEPARTMENT OF TRANSPORTATION, LANDSCAPE MAINTENANCE — DATE 6/25/2007
MUNICIPAL WATER, SBWR — Timothy S.N. Town — DATE 6-27-07

LANDSCAPE DESIGN REVIEW — GABRIELLE WILDER — DATE 6/27/07
DEPARTMENT OF TRANSPORTATION, LANDSCAPE MAINTENANCE — DATE 6/27/07
SURVEY SECTION — DATE

DEPARTMENT OF PUBLIC WORKS
SAN JOSE, CALIFORNIA

CITY OF SAN JOSE
CAPITOL OF SILICON VALLEY

APPROVED BY KATY ALLEN
DIRECTOR OF PUBLIC WORKS

SHEET 8 OF 10

STANDARD LANDSCAPE SPECIFCATIONS FOR CITY STREETSCAPE PROJECTS

DESCRIPTION OF SCOPE OF WORK: The Contractor's scope of work shall consist of the construction and maintenance of City Streetscape Improvements as described in these standard landscape specifications and the attached standard landscape details and the approved Project Landscape Improvements Plans, which shall therefore be referred to as the 'Project Landscape Improvements Plans'. The following is an index of the standard landscape specifications which cover the Contractor's scope of work for City Streetscape Improvements:

SECTION 1 - GENERAL REQUIREMENTS
SECTION 2 - SITE PREPARATION
SECTION 3 – EARTHWORK AND TOPSOIL
SECTION 4 - CONCRETE WORK
SECTION 5 - CONCRETE PAVERS
SECTION 6 - IRRIGATION
SECTION 7 - PLANTING
SECTION 8 - MAINTENANCE

SECTION 1 - GENERAL REQUIREMENTS:

1.01 PLANS AND WORKING DRAWINGS: Pursuant to Section 5.1.02 of the City Standard Specifications, the contractor shall at all times have on the work site the approved Project Landscape Improvements Plans, issued plan revisions and authorized change orders available for the Engineers use and review.

1.02 ORDER OF WORK: The Contractor's work shall conform to these standard landscape specifications and the City of San Jose, Department of Public Works, Standard Specifications, dated July 1992 ("City Standard Specifications"), per section 5-1.05 "Order of Work", of the City Standard Specifications. These standard landscape specifications are included in the Special Provisions for City Streetscape Projects. These standard landscape specifications supersede Section 20 of the City Standard Specifications. All work for the construction of street paving, sidewalks, curb and gutters, drainage and utilities for street improvements, potable or recycled water supply meter, electrical power supply and telephone line if required for irrigation system, is addressed in the Project Engineering and Street Improvement Plans, unless otherwise noted on these plans.

1.03 SUPERINTENDENCE: Contractor shall have an authorized representative at the site of the work at all times during construction in conformance with Section 5-1.06, "Superintendence", of the City Standard Specifications.

1.04 LAND SURVEY & SURVEY MONUMENTS:

A. GENERAL REQUIREMENTS: The Contractor shall be responsible for procuring professional land surveying services as necessary to construct this project. A California licensed Land Surveyor, or Civil Engineer authorized to practice land surveying as defined in the Professional Land Surveyors Act, shall be in responsible charge for all land surveying and survey monument work to be performed in conjunction with the project scope of work. The Engineer may, at his or her sole discretion, use the City Survey Section for quality assurance purposes including, but not limited to, the following: verification of project control points, verification of lines and grades, and inspection of survey monument preservation or replacement.

B. SURVEY MONUMENT PRESERVATION & REPLACEMENT: The following wording expands upon Standard Specification Section 7-1.11 "Preservation of Property." of the DPW Standard Specifications. It is the responsibility of the Contractor to save, preserve and protect any existing survey monuments. The preservation of existing survey monuments located within new or existing median islands shall comply with detail 8, sheet 1 of these standard landscape details. In the event that a survey monument is lost to construction activities, the Contractor shall, at the Contractor's sole expense, engage the services of a Professional Land Surveyor authorized to practice in the State of California, to be in responsible charge of the re-establishment of the monument in compliance with Detail R-16 of the DPW Standard Details, and the filing of a Corner Record, or Record of Survey as applicable, with the County's Surveyor's Office in compliance with the Professional Land Surveyor's Act.
In the event that disturbance or destruction of any survey monument is imminent, regardless of whether removal and replacement is indicated on the project plans, reference points to the survey monument should be set by the Contractor's Surveyor such that it can be reset in its original position. The Contractor is required to provide the Engineer with a minimum of 72 hours of advance notice, prior to disturbing any existing monument.
Prior to filing the Corner Record or Record of Survey with the County Surveyor's Office, the Contractor's Surveyor shall submit one copy to the Engineer and the City Survey Section for review and approval. The Contractor's Surveyor shall provide the City Survey Section with one copy of the finalized Corner Record or Survey as filed with the County Surveyor's Office.

1.05 WATER POLLUTION: The Contractor shall conform to Section 7-1.01 G, "Water Pollution," of the City of San Jose Standard Specifications and any additional construction Best Management Practices ('BMP's') requirements for storm water pollution prevention or erosion control included in the conditions for the planning permit issued to the Developer for the project by the Department of Planning, Building and Code Enforcement.

1.06 USE OF PESTICIDES: The Contractor shall conform to Section 7-1.01 H, "Use of Pesticides," of the City Standard Specifications and these standard landscape specifications. Preventing landscape pest problems at the Project site are the responsibility of the Contractor. All pesticide applications at the Project site shall be in compliance with the California Department of Pesticide Regulations laws and the City of San José's current Integrated Pest Management Policy. Herbicides are classified as pesticides. The Contractor shall provide the services of a certified pest control applicator, with Qualified Applicator Certificate ("QAC") from the State of California's Department of Pesticide Regulation, to provide any pest control applications required at the Project. All pesticide applications by the pest control applicator require a written pesticide recommendation by a State licensed Pest Control Advisor ("PCA"), and shall be done with the maximum care to avoid any hazard to persons, pets, or property. The pest control method used at the Project site must be the least toxic pesticide available to do the job. The Contractor shall eliminate the use of pesticides that cause pollution to surface waters. At no time shall the Contractor use Diazinon, chlorpyrifos, chlopyralid, or any other pesticides that are restricted by the State or City on any City property or street right of way. The application of any non-restricted pesticide, especially organophosphate or copper-based pesticides, is also prohibited. The Contractor shall provide summary monthly reports of any pesticide usage at the Project site to the Engineer and the County of Santa Clara Department of Agriculture. The Engineer shall provide copies of all monthly reports to the City's Environmental Service Department. Refer to Appendix K - City of San Jose's Monthly Summary Pesticide Use Report, in the "Guidelines for the Planning, Design and Inspection of City Streetscape Projects".

1.07 TRAFFIC CONTROL: The Contractor shall be responsible to provide a traffic control plan for the project, in compliance with the "Traffic Control Plan Requirements" of the Department of Public Works, Transportation and Development Services Division, and per Section 7-1.08, "Public Convenience", Section 7-1.09, "Public Safety", and Section 12, "Construction Area Traffic Control Devices", of the City Standard Specifications. The Traffic Control Plan shall include all signs, barricades, flagmen, etc., necessary to meet all traffic requirements for this project.

1.08 ARCHAEOLOGICAL REQUIREMENTS: Contractor shall protect any evident of prehistoric cultural resources or human remains found site of the work at all times during construction in conformance with Section 7-1.27, "Archeological and Paleontological Rights", of the City Standard Specifications. Should evidence of prehistoric cultural resources be discovered during construction, work within 50 feet of the find shall be stopped to allow adequate time for evaluation and mitigation by a qualified professional archaeologist. The material shall be evaluated and if significant, the work in this area shall be put on-hold by the Developer until a mitigation program can be developed and implemented by the City's Environmental Principal Planner. As required by County ordinance, this project has incorporated the following guidelines. Pursuant to Section 7050.5 of the Health and Safety Code, and Section 5097.94 of the Public Resources Code of the State of California in the event of the discovery of human remains during construction the Contractor shall notify the Engineer immediately, and work within 50 feet of the find shall be stopped to allow adequate time for evaluation and mitigation by the Santa Clara County Coroner. The County Coroner shall then be notified by the Engineer, in order to make a determination as to whether the remains are Native American. If the Coroner determines that the remains are not subject to his authority, the County shall notify the Native American Heritage Commission who shall attempt to identify descendants of the deceased Native American. The remains shall be evaluated and if significant, the work in this area shall be put on-hold by the Developer until a mitigation program can be developed and implemented by the City's Environmental Principal Planner.

1.09 DUST CONTROL: All work on this project shall conform to Section 10, "Dust Control", of the City Standard Specifications.

1.10 WATERING: The Contractor shall be in compliance with the Water Waste Prevention and Drought Condition Measures, Chapter 15.10 of the San Jose Municipal Code. The Contractor shall provide any trucked in water required for the construction and maintenance of the improvements.

1.11 WATER, ELECTRICAL & TELEPHONE UTILITES: The metered electrical service, water supply meter and telephone line required for irrigation controller is not included in the scope of these standard landscape specifications. The Developer is responsible to provide the aforementioned utilities and the points for connection required for the irrigation system. The Contractor's scope of work included in these standard landscape specifications is to provide the connection to the aforementioned utilities, as required for the irrigation system. Refer to the Project Engineering and Street Improvement Plans, unless otherwise noted on these plans.

1.12 PROTECTION OF WORK: The Contractor shall provide adequate protection of all work until final completion and acceptance. Contractor shall take particular precautions to protect all existing survey monuments, utilities, pavement, curbs, irrigation equipment and lines, street lights, traffic poles, pullboxes, signal cabinets, trees and shrubs to remain, existing buildings and structures, underground piping, other facilities, etc. All damaged or disturbed items shall be replaced at the expense of the Contractor prior to acceptance and to the satisfaction of the Engineer.

1.13 SUBMITTALS: The purpose of this section is to define the submittals required for this project. Should one of these requirements be found elsewhere in these standard landscape specifications or on the Project Landscape Improvement Plans and not be listed herein below, it shall still be the Contractor's responsibility to provide said submittals and shop drawings. The Contractor's superintendent shall retain a copy of approved submittals at the work site at all times for the Engineer's use and review. The submittals shall be kept in a binder and cataloged for ease of reference. Failure on the Contractors part to comply with these requirements will result in the suspension of inspection until conformance with this section. Unless stated otherwise, it is intended that any specified material or equipment items shall be deemed to include the term "or approved equal".
The following construction submittals are critical to the construction process, and are therefore required by the Contractor prior to the start of construction, for the review and approval of the Engineer:
A. Traffic control plan
B. Copy of the approved Project Erosion Control Plan or Storm Water Pollution Control Plan
C. Any device required for Construction BMP's for Storm Water Pollution Prevention/Erosion Control.
D. Any chemical control recommendation for pesticides proposed for clearing and grubbing
E. Soils Analysis Report for proposed import topsoil and sample of import topsoil.
The contractor shall not start work, until the aforementioned submittals are approved by the Engineer.
The following submittals shall be provided by the Contractor to the Engineer for review, at the Pre-construction meeting:
A. All irrigation materials
B. Decomposed granite.
C. Decorative gravel
D. Interlocking pavers.
E. Concrete mix design.
F. Color pigments for concrete.
G. Pro-chip mulch.
H. Plant materials, including grass.
L. Soil amendments.
M. Sand for trench backfill.
N. Pesticide application (certificate & use reports)
O. Soils Analysis Report for amended import topsoil

1.14 PRECONSTRUCTION MEETING:
A. The Contractor is responsible for coordinating and attending a preconstruction meeting at least 72 hours prior to starting work, which shall also be attended by the Developer's Representative and the City Engineer ("Engineer") assigned to the project. The Project Inspector is assigned to the project by the Engineer. The Contractor shall notify the Project Inspector at the number listed on the approved Project Landscape Improvement Plans, for the purpose of coordinating the pre-construction meeting. During the pre-construction meeting, the Contractor shall provide the Engineer with the critical submittals, which are required prior to the start of the construction.
B. If irrigation system has been designed for immediate connection to recycled water meter, the Contractor shall also contact South Bay Water Recycling ("SBWR"), Muni Water at 277-3671, and they will assign an inspector to the project.

1.15 REQUIRED INSPECTION POINTS: During the course of construction, the following minimum number of inspections by the Engineer shall be required:

	Inspection Required On:	Prior to:
1.	Pre-construction meeting	Start of Construction
2.	Rough grading	Layout of surface features
3.	Layout of surface features	Construction
4.	Form work	Placing of P.C.C.
5.	Irrigation mains and laterals	Covering trenches
6.	Import topsoil	Delivery to site and installation
7.	Soil Amendments, fine grading and irrigation coverage	Planting
8.	Plant materials	Installation
9.	Irrigation and planting	Maintenance
10.	Record drawings	Preparing controller charts
11.	Pre-maintenance	Start of maintenance period
12.	Punch list items	Final acceptance

In the event the Contractor continues to operation without receiving the above inspections, the Engineer may, at his discretion, require the Contractor to return all construction status to the previous inspection point or require additional inspections. For additional requirements, the Contractor shall refer to Appendix J - Landscape Inspection Checklist for City Streetscape Projects", in the "Guidelines for the Planning, Design and Inspection of City Streetscape Projects".

1.16 FINAL INSPECTION AND ACCEPTANCE: In conformance with the City Standard Specifications, the following is the procedure for final inspection and acceptance: When the Contractor feels that all work on this project is complete, they shall request a final inspection of this project. The Contractor shall provide the Engineer with the record drawings for the project. The Engineer and other City representatives shall make a visual inspection of the project. If during this inspection the project is found to be complete, a final inspection will be granted by the City. Any deficiencies, corrections, or repairs as noted during this inspection must be completed by the Contractor prior to the City's acceptance of the project. The Contractor shall continue to be responsible for all facilities, structures, equipment, and all landscape maintenance that is part of this contract until all items are corrected and complete and a final acceptance by the City is granted.

SECTION 2 - SITE PREPARATION:

2.1 Description: Work under this section consists of:
a. CONSTRUCTION BMP'S
b. PROTECTION AND PRUNING OF EXISTING TREES
c. CLEARING AND GUBBING

2.2 Materials:
2.2.1 Any devise required to implement BMP's for storm water pollution prevention or erosion control, shall conform to Provisions in Section 7-1.01G, "Water Pollution," of the Standard Specifications, the details, operating procedures, and maintenance guidelines of the California Regional Water Quality Control Board San Francisco Bay Region's "Guidelines for Construction Projects" (Guidelines), the California Regional Water Control Board San Francisco Bay Region's "Erosion and Sediment Control Field Manual" (Manual).
2.2.2 Fencing for tree protection: Four foot (4') high interwoven snow fencing or approved equal. Stakes for fencing, shall be metal, minimum four feet (4') above grade.

2.3 Construction Methods:
2.3.1 PROTECTION & PRUNING OF EXISTING TREES: includes maintenance and protection of all existing trees. Protection of existing trees: All trees to remain on site shall be protected from all trades working on the job, and it shall be the General Contractor's responsibility to insure that all Subcontractors are aware of and held responsible for any damage to existing trees.
Fencing: Every tree designated to be saved, shall be fenced off at the existing canopy (dripline) of the tree wherever possible prior to any grading, excavating or pruning activities. Where trees are located in groupings or groves, the entire perimeter around the dripline of the grove shall be fencing off. When this is not possible, because of extraneous site conditions, the fence perimeter shall be a minimum of ten feet (10') in radius from the tree trunk for all trees twelve inches (12") in caliper or greater when measured twelve inches (12") above the ground. For trees less than twelve inches (12") in caliper, the protective fencing shall be installed at a minimum of four feet (4') in radius around the entire tree.
Maintenance: Throughout the life of the construction project, the General Contractor shall be responsible for watering, fertilizing, pruning, and other measures necessary to protect all existing trees.
In addition, the General Contractor shall be held responsible to insure that the following protective measures are carried out throughout the entire construction period:
a. The fence shall consist of metal stakes (a minimum of four feet (4') above grade) placed four feet (4') o.c. and covered with an interwoven four foot (4') high snow fencing or approved equal.
b. Excavation, trenching, filling, parking of equipment, or storage of materials shall not be allowed within the fenced area.
c. If, because of limiting site conditions, trenching is unavoidable within the above fenced area, the City Arborist shall approve trenching procedure prior to commencing the work.
e. All trees shall be pruned and otherwise maintained by a certified Arborist provided by the Contractor, approved by the City Arborist.
f. If any roots one and one-half inches (1-1/2") or greater are encountered, all trenching within the fenced area shall be done by hand.
g. Pruning of existing trees shall concern itself with removing all dead wood, one-half inch (1/2") or greater in size, and removing vines and/or sucker growth. The procedure for each tree may vary and shall be approved by the City Arborist prior to commencing any work.
h. Tree limbs in the way of proposed structures shall only be trimmed by a reputable Arborist or Tree Surgeon to be approved by the City Arborist. Tree pruning shall be done by the Contractor at the direction of the inspector to facilitate ease of construction.
i. The General Contractor shall be liable for all damages and necessary repairs to all existing trees, including trunk, branches, or roots. Repairs shall be made by a reputable Arborist or Tree Surgeon to be approved by the City Arborist.
j. The General Contractor shall be liable for the loss in value to damaged trees and for all repair costs resulting as determined by the City Arborist. Because of the irreplaceable nature of many of the existing trees, the liability to the Contractor shall be set at $5,000 minimum per tree. The amount of assessment shall be determined by the City Arborist and the Project Engineer.

2.3.2 CLEARING AND GRUBBING: shall consist of clearing the area within the limit of work of all objectionable plant material, to include roots, snags, brush, grass, weeds, and similar undesirable vegetation and any other debris found at the site not specified as improvements to be included as part of this project. All such materials shall be removed from the site and disposed of in an acceptable manner. In addition to the clearing of vegetation growth, the area shall be grubbed to a depth of six inches (6") below finish grade, of debris and rocks over one inch (1") in size. Said material shall be removed from the site and disposed of in an acceptable manner, to the satisfaction of the Engineer.

SECTION 3 - EARTHWORK AND TOPSOIL

3.1 Description: Work under this item shall include:
a. Stockpile, as necessary, existing top 6 inches of earth material for use as topsoil.
b. Furnish and place approved borrow or import as necessary to meet grades shown on the plan.
c. Excavation and earthwork for landscape improvements.
d. Approved import topsoil and finish grades as shown on the Project Landscape Improvement Plans.

3.2 Materials:
3.2.1 SOIL TESTING AND TOPSOIL: Approved, import topsoil is required to be installed as shown in details and Project Landscape Improvement Plans. The import topsoil shall comply with the following specifications, in order to be approved by the Engineer for use on the Project. The Contractor is required to provide sampling and soil testing of the proposed import soils by a qualified soil analysis laboratory ('soil lab') for the review and approval of the Engineer. The Contractor is also required to provide sampling and soil testing of any existing topsoils approved to remain on-site by the soil lab for the review and approval of the Engineer. The soil lab shall be the Soil and Plant Laboratory, Inc. located in Santa Clara, CA, or an approved equal. The soil lab shall prepare a Soil Analysis Report, which shall be a AO5 Comp Soil Chemistry Package. The AO5 soil analysis report shall include soil sample testing data, the analysis of that data, a determination that the existing soil at the Project site is compliant with these standard landscape specifications for approved topsoil, and the Project name and location for identification purposes. The import topsoil shall be sufficient to support a high quality aesthetic landscape, with the preparation and amendments recommended by the soil analysis laboratory, and shall contain sufficient quantities of available nitrogen, phosphorus, potassium, calcium and magnesium to support normal plant growth or can be amended per the recommendations in the approved soil analysis report after installation. In the event of nutrient inadequacies, provisions shall be made to add required materials prior to plantings. If the native subgrade is within specified limits, the imported topsoil's texture should be as similar as practical to that material. The import topsoil physical properties, USDA classification of fraction passing 2.0 mm sieve, shall conform to the following:
Topsoil Designation: designation shall be one of the following: loam, sandy loam, sandy clay loam or clay loam.
Soil classification for topsoil:

Class	Particle Size Range	Max %	Min %
Coarse sand	0.5mm - 2.0 mm	15	0
Silt plus clay	<0.05 mm	50	30
Silt	0.002 mm – 0.05 mm	35	10
Clay	0 - 0.002 mm	30	10
All Gravel	2.0 mm – 13.0 mm	15	0
Rock	None > ½"	10% by Volume, with none over 1"	0
Organic		15	0

The import CHEMISTRY - SUITABILITY CONSIDERATIONS:
1. Salinity: Saturation Extract Conductivity (ECe) less than 3.0 dS/m @ 25 degrees C.
2. Sodium: Sodium Adsorption Ratio (SAR) Less than 6.0
3. Boron: Saturation Extract Concentration Less than 1.0 ppm
4. Reaction: pH of Saturated Paste: 5.5 – 7.5 without high qualitative lime.

3.3 Testing and Construction Methods:
3.3.1 The Contractor shall be responsible for stockpile any topsoils and meeting the finish grades as shown on in the Project Landscape Improvement Plans. Should a net cut result, the Contractor shall dispose of the excess material off site. The Contractor shall follow all State requirements for the removal of existing soil.
3.3.2 On sites where import topsoil shall be installed, after the required excavation is completed the Contractor shall have the soil lab take samples of the native subgrade to determine the soil texture of this soil. If the native subgrade texture is within specified limits, the import topsoil shall be as similar as possible to the subgrade. The Contractor shall provide the soil lab with a copy of the Project Landscape Improvement Plans that contains these standard landscape specifications for approved import topsoil, the Project name, City project file number, and a Project site map for reference purposes. A submittal of the proposed import topsoil along with a complete soil analysis report shall be delivered by the soil lab directly to the Engineer for review and approval. For Type 2 Projects, the Engineer shall provide a copy of the soil analysis report to D.O.T. Maintenance Superintendent, 1404 Mabury Road, San Jose, CA (408) 277-5907 for review and approval. The Engineer shall review the soil analysis report, to determine if the proposed topsoil complies with the specifications. After the Engineer has approved the import topsoil, the Contractor shall provide the delivery of the approved import topsoil to the Project site. The initial soil analysis report of the proposed import shall not however include any amendment recommendations. Once the import topsoil has been reviewed and approved by the Engineer, the soil lab will add these amendment recommendations to the soil analysis report for the planting operations described in Section 7 of these standard landscape specifications. On sites where import topsoil shall be installed, the Contractor shall cultivate and loosen (a.k.a. rip) the top six-inch layer of the subgrade to prepare for the installation of import topsoil.
3.3.3 In planting areas, material shall be placed in 6-inch maximum layers, shaped and compacted to a density of 80%. Mounded areas at back of sidewalk shall be formed with gently sloping sides and crowns and smoothed even transitions at the bases, and areas to be planted with turf shall be graded so that power mowers can be operated efficiently over all areas. No abrupt changes in slope or contour will be accepted. Contractor shall take special care to feather or taper graded areas to match grade at edges.
3.3.4 Engineer shall approve finish grades prior to removal of earth moving equipment from project site and prior to turfing and planting operations.
3.3.5 Any excavated trenches deeper than two (2) feet deep shall be backfilled at the end of each day. All other trenches less than two (2) feet deep shall be adequately barricaded at the end of each day to the satisfaction of the Engineer.

SECTION 4 - CONCRETE:

4.1 Description: Work under this section includes the following types of concrete work:
a. Pads for irrigation controller and backflow prevention enclosures
b. Maintenance bands, separator bands and mowbands
c. Sub-base for decorative interlocking pavers
d. Footings for signage
e. Other miscellaneous P.C.C. items as they appear in the Project Landscape Improvement Plans.

4.2 Special Requirements:
4.2.1 Reference Documents: All references contained herein are made to the City of San Jose, Department of Public Works, Standard Specifications, July 1992 edition (Section 73, "Concrete Curbs and Sidewalks", and Section 90, Portland Cement Concrete"). All Portland Cement Concrete shall be Class 'A'.
4.2.2 Test and Inspection:
Compression Tests: If any test report indicates 28 day specimen below required strength and if requested by the Engineer, the Contractor shall take test cores of hardened concrete in accordance with ASTM C42 Specifications. Concrete paving not meeting ASTM C42 standards shall be deemed defective and be removed and replaced by the contractor to the satisfaction of the Engineer. Cost of test cores, repairs, removal, and replacement of defective concrete shall be paid by the Contractor.
Cement and Aggregate Test: Furnish to the Engineer the following data:
A. Mill certificates from cement manufacturer certifying that cement meets ASTM specification and is suitable for purpose intended.
B. Proof of aggregate's compatibility with cement to be used and certification that aggregates meet ASTM specification. Owner reserves the right to have his testing laboratory perform additional tests on cement and aggregates which may be deemed advisable.
Inspection: All concrete and other related work shall be inspected by the Engineer or his representative. Notify the Engineer at least 48 hours prior to placing any concrete.

4.3 Materials:
4.3.1 Cement: All cement shall be Portland cement conforming to "Specifications for Portland Cement" ASTM C-150. Maintain the same brand, type, and source of cement throughout the project.
4.3.2 Concrete Aggregate: Concrete aggregate shall conform to Section 90, "Portland Cement Concrete", of the City Standard Specifications as it applies to this Project. Obtain aggregate from source of proven history of successful use. Source shall remain constant throughout the project unless approved by the Engineer. Submit notice ten (10) days prior to changing source to allow for new mix design.
4.3.3 Water: Shall be clean, potable water free from impurities detrimental to concrete and shall conform to the City Standard Specifications.
4.3.4 Curing Method: Shall be as specified in the City Standard Specifications.
4.3.5 Expansion Joints: Shall be as shown on Project Landscape Improvement Plans.
4.3.6 Exposed Aggregate Finish for Decorative Concrete Paving: Shall be Terri Beach variety or approved equal, as shown on Project Landscape Improvement Plans. Texture shall be water worn and naturally smooth, 1/4" - 3/8" diameter stones, with equal amounts of reds, blacks, golds, and beiges.
4.3.7 Colored Concrete Paving for Decorative Concrete Paving: shall be PCC concrete paving with either integral color or topically applied color hardener with a medium broom finish as shown on Project Landscape Improvement Plans. Integral color or topically applied color hardener shall be as manufactured by Davis Colors or an approved equal, and as shown on the Project Landscape Improvement Plans.

4.4 Workmanship:
4.4.1 Concrete Strength: All concrete shall be Class A.
4.4.2 Mixing: All Concrete Placed for Flat Work Shall Be Transit Mixed Concrete. Transit mixed concrete shall conform to ASTM C94-67. The rate of delivery, haul time, mixing time, and hopper capacity shall be such that all mixed concrete delivered shall be placed in the forms within 90 minutes from the time the cement and water are introduced into the mixer. Any interruption in placing in excess of 90 minutes will be cause for shutting down of the work for the day and the wasting of any remaining concrete in hoppers and mixers. In case such interruptions occur, the Contractor shall provide construction joints where and as directed by the Engineer. Cut concrete back to such line. Construction joints shall be as detailed in the Project Landscape Improvement Plans. Mixing of Concrete: All mixing shall conform to Section 90, "Portland Cement Concrete", of the City Standard Specifications as it applies to this project.
4.4.3 Maximum Size of Aggregate for Various Portions of the Work: The maximum size of the aggregate shall not be larger than 1/5 of the narrowest dimension between the forms of the members for which the concrete is used or larger than 3/4 of the clear space between reinforcing bars.
4.4.4 Conveying Concrete: Concrete shall be conveyed as rapidly as practicable from the mixer to the place of final disposition without separation or loss of ingredients. It shall be conveyed as close to the final location as practicable to avoid rehandling or flowing. Conveying equipment shall be adequate in size and capacity as practicable to avoid rehandling or flowing. Conveying equipment shall be adequate in size and capacity to handle the work efficiently and shall be thoroughly cleaned before each pouring session.
4.4.5 Placing Concrete: The Contractor shall notify the Engineer at least 48 hours prior to placing any concrete. No concrete shall be placed in any unit of work until all form work and shoring has been constructed and all reinforcements and items to be built into concrete have been placed and secured and approved by the Engineer. Notify other crafts so they may deliver anchors, inserts, etc., or other material required to be embedded in concrete.
Reinforcing or other material that has been set shall not be disturbed. Before placing concrete, all forms, except sealed forms, shall be thoroughly soaked with water. All moldings and wood strips shall be soaked to prevent swelling and probable ensuing spalling of concrete. Concrete shall be placed in a manner that will prevent damage to, or displacement of, forms, reinforcing, pipes, etc., that are to be contained in the concrete.
4.4.6 Weather Requirements:
Cold Weather: Concrete shall not be placed when the atmospheric temperature is below 40°F or when conditions indicate that the temperature will fall below 40°F within 72 hours. Concrete when deposited shall have a temperature of not less than 60°F. All reinforcement, forms, and ground which concrete will be in contact with shall be completely free of frost. The concrete and form work must be kept at a temperature of not less than 50°F for not less than 72 hours after pouring.
Hot Weather: Concrete shall not have a placing temperature higher than 85°F. All concrete shall be delivered to the forms at the coolest temperature practicable. Crushed ice, in lieu of mixing water, may be used to maintain the temperature. Concrete shall not be placed, when in the opinion of the Engineer, the sun, heat, wind, or humidity will prevent proper placement and consolidation.
4.4.7 Attention to Forms: Experienced workmen shall moisten the forms during the pouring of concrete. They shall strengthen any portion that may show deflection or movement of any nature. Any deflection or movement of forms which may cause variation in the concrete lines will be considered cause for rejection of the concrete work affected. All form work and material shall be inspected and approved by the inspector prior to pouring of any concrete.
4.4.8 Patching: After forms are removed, the Engineer shall inspect all concrete surfaces. All surface defects, including projecting fins, rock pockets, honeycombs, foreign matter, cracks, and holes shall be filled and patched. Bolts, wires, nails, form ties, etc., extending from the face of the exposed concrete surfaces shall be cut off at least 1" deep in the concrete immediately after removal of forms.
Fill holes with a 1:3 mixture of cement and sand mortar, the same color as the adjoining concrete. Mix and place mortar as dry as practicable, and finish flush with adjacent surface. All patching and corrective work shall be done at the Contractor's expense to the satisfaction of the Engineer. Concrete surfaces so repaired shall duplicate the appearance of the unpatched surfaces.
Defective work, such as understrength of concrete, surface out of line, level, or plumb, excessive cracks, honeycomb, rock pockets, voids, exposed reinforcing, etc., shall be repaired, removed, and replaced by the Contractor as directed and to the satisfaction of the Engineer at no cost to the Owner.
The limits of all units of pour shall be approved by the Engineer, before any concrete is placed. The unit of operation selected for continuous pouring and the location of construction joints shall be such as to least impair the strength and appearance of the various section.
4.4.9 All Other Concrete: Location and details of construction joints shall be as approved by the Engineer. All construction joints shall be well roughened, keyed, and thoroughly cleaned or broomed, so as to remove all dirt and laitance, and saturated with water before commencement of pour.
4.4.10 Defective Work: All concrete work which is not true to line and plane, not conforming to specified finishes, exceeds tolerances, does not slope to drain, improperly cured, and others not conforming to Project Landscape Improvement Plans as specified herein shall be deemed defective.
All work determined to be defective by the Engineer, which does not meet the above description, shall be removed and replaced with proper work at no cost to the City.
4.4.11 Protection: Protect all exposed surfaces, including flatwork, as required to protect the work from damage by impact, stains from rubbish, and work from other trades. Damaged surfaces shall be replaced at no added cost to the Owner.
4.4.12 Impressions: No impressions for advertising of Contractor name or other messages shall be impressed in any concrete.

SECTION 10-5 CONCRETE PAVERS:

Decorative concrete pavers: shall be as manufactured by Basalite, contact phone number (800) 266-3670, or an approved equal. Pavers shall be installed on a sand setting bed over a concrete sub-base as shown on the as shown on Project Landscape Improvement Plans and per manufacturer's specifications. All edge pieces shall be saw cut and fitted into place. Pavers shall be butted together and all joints shall be swept with Concrete Sand ASTM C33, and vibrated into place with appropriate mechanical device. Finish surface of paving shall be relatively smooth and flush to the satisfaction of the Engineer.

SECTION 10-6 IRRIGATION SYSTEM:

6.1 Description: Work under this section includes all labor, materials, equipment, tools, accessories, transportation, and services as required for proper installation and operation of a complete and fully automated irrigation system. All work shall conform to State and local codes and the latest version of the "South Bay Water Recycling (SBWR) Rules and Regulations." All irrigation and potable water piping installation shall be installed to meet requirements for present or future recycled water use. Refer to the standard landscape details for required materials and proper installation procedures for recycled water and potable water piping installation. Where both SBWR details and City details are shown for irrigation pipe trench backfill, the City details shall prevail. The Contractor shall consult all other sections to determine the extent and character of related work and to properly coordinate work specified herein with that specified elsewhere to produce a finished workmanlike installation satisfactory to the City. Work included under this section shall consist of constructing an automatic electrically operated irrigation system. Details of installation and construction shall conform to the Project Landscape Improvement Plans. Work includes all elements relating directly to the irrigation system from the point of connection with the water utility meter to the most distant sprinkler head and includes furnishing of all labor, tools, materials, etc. necessary for installation. Before proceeding with any work, the Contractor shall carefully check and verify all dimensions and shall report any variations to the Engineer. The system shall efficiently and evenly irrigate all areas, shall be complete in every respect, and shall be left ready for operation to the satisfaction of the Engineer. Included in the work shall be furnishing and installing:
(1) Mains
(2) Branch irrigation lines (laterals)
(3) Quick coupling valve lines
(4) Potable water mains
(5) Backflow prevention units
(6) Backflow prevention unit enclosures
(7) Strainers
(8) Pressure reducing valves
(9) Master valve, flow sensor
(10) Automatic irrigation controller
(11) Automatic irrigation controller enclosure
(12) Remote control valves
(13) Electrical power distribution system to automatic control valves
(14) Gate valves
(15) Quick coupling valves
(16) Flushing lines
(17) Testing mains
(18) Sprinkler heads

6.2 Materials:
6.2.1 General: All valves and fittings shall be designed for and shall meet the requirements for service at an operating pressure of 150 pounds per square inch, unless otherwise specified. All valves and fittings shall have connections compatible with the type of pipe joint selected by the Contractor. If mechanical joints or slip-type joints are used, the Contractor shall furnish and install necessary Portland Cement Concrete thrust blocks as specified by the Engineer, Class A, 6 sack.
6.2.2 Pipe: Standard galvanized pipe shall conform to the American Water Works Association Standard C400-80. Asbestos cement (A.C.) pipe is no longer acceptable for new pipe.
PVC Pipe: All plastic pipe shall be continuously and permanently marked with the following information: Manufacturer's name, kind of pipe, material, size NSF approved, and schedule of type. The manufacturer shall also mark the date of extrusion on his pipe. This dating shall be done in conjunction with records to be held by the manufacturer for two years covering quality control tests, raw material batch numbers, and any other information deemed necessary by the manufacturer. Guarantee shall cover workmanship of materials from the plastic pipe manufacturer for all plastic pipe and fittings. Main irrigation lines shall be Schedule 40 PVC for lines 1-1/2 inches and smaller and Class 315 PVC for lines 2 inches and larger. Lateral irrigation lines shall be Schedule 40 PVC. PVC pipe shall conform to ASTM D-2241. Branch irrigation lines shall be Schedule 40 PVC. Potable main lines beyond the backflow prevention unit shall be Schedule 80 PVC. Water service pipe from the meter through the backflow prevention unit shall be copper water tube Type K per ASTM B 88. . The pipe shall be protected from the elements prior to installation. All on-site buried irrigation pipes for irrigation systems designed for future or immediate connection to recycled water shall be identified by one of the following methods:
- Purple-colored PVC with continuous wording "CAUTION - RECYCLED WATER" printed on opposite sides of the pipe; pipe shall be laid with wording facing upwards.
- If the irrigation mainlines and laterals are **white** colored PVC, marking tape shall be installed with a minimum width of 3 inches reading: "CAUTION - RECYCLED WATER" (in black or white lettering on purple background). The tape shall run continuously on top of piping and shall be attached to piping with plastic tape banded around the marking tape and the pipe every 5 feet on center.
- Blue-colored PVC pipe shall not be used unless the blue color is completely obscured by encasement of the pipe with purple polyethylene wrap or other methods approved by SBWR.
In the event that the City's Director of Planning, Building and Code Enforcement has approved an exemption for the project from the use of recycled water, that would allow the Contractor to install white PVC in lieu of purple, for mains and laterals.
6.2.3 Pipe Fittings: Pipe fittings shall be of the same material as pipe where applicable and recommended by the pipe manufacturer for the particular type of pipe to which they are to be connected and shall conform to the requirements of one of the following specifications:
Standard Galvanized pipe fittings shall conform to the requirements of the American Water Works Association Committee 8620D report, "Collected Standards for Service Line Materials". Galvanized pipe shall be joined by means of couplings. Couplings, elbows, tees, and other fittings shall be galvanized conforming to the above requirements.
PVC: All slip-joint PVC fittings shall be Schedule 40, except for quick coupling valve PVC fittings which shall be Schedule 80.
6.2.4 Valves, Cocks, Stops, etc.: Provide and install all valves as indicated on the drawings and/or as required for the proper control of the piping systems in which they are incorporated. All main shut-off valves shall be gate valves. Gate valves 2-1/2 inches and smaller shall be bronze or brass. All valves and sizes shall be as indicated on the plan. A concrete box and cover of adequate size to allow maintenance freedom shall be installed over each main shut-off valve in the system. See plan details for proper box installation. Valve shall be 150 psi test water pressure unless otherwise specified.
6.2.5 Master Valve: Shall be manufactured by Griswold, model 2160 or approved equal, fully compatible with the automatic controller.
6.2.6 Backflow Preventer and Enclosure: Shall be provided and installed as indicated on the Project Landscape Improvement Plans. The Contractor shall meet all requirements of the appropriate water company for testing and certification at time of activation. See Section 9 - Maintenance for certification after activation.
6.2.7 Automatic Controller and Flow Sensor: The automatic controller shall include:
(1) The pre-assembled controller unit, including enclosure
(2) Installation of unit and concrete pad
(3) Connection to control wires for automatic control valves
(5) All other appurtenances and tests necessary to complete installation of unit
(6) Master valve
(7) Flow sensor
The automatic irrigation controller shall be the Rainmaster Eagle for Type 1 projects and the Calsense ET2000e by Calsense California Sensor Corporation, for Type 2 projects and Refer to the details for the controller model number and other required equipment. Controller shall be programmed and fully capable of communication with DOT Maintenance office.
6.2.8 Remote Control Valves: Remote control valves shall include housing, cover, and other appurtenances, each of which shall conform to the requirements of one of the following specifications:
(1) Remote control valves shall be as indicated on the Project Landscape Improvement Plans and have a glass-filled nylon construction globe pattern body rated at 200 psi. The valve shall have an internal manual bleed, captive solenoid plunger, captive bonnet bolts with matching brass body inserts, and fabric reinforced diaphragm. The approved remote control valves and controller shall be compatible.
The approved remote control valves and controller shall be compatible.
(2) Included as part of this item shall be boxes, gravel bed, splicing to control wires and common ground, tee or saddle, all other fittings for connection to main, and all other appurtenances necessary to complete this item as shown on the Project Landscape Improvement Plans.
6.2.9 Quick Coupling Valves: Quick coupling valves shall be two (2) piece brass construction one inch (1") angle slot type with locking yellow thermoplastic cover for potable water irrigation systems and locking purple thermoplastic cover for recycled water irrigation systems, capable of withstanding working pressure of 125 psi without leakage. Quick coupling valves shall be installed on a swing joint assembly.
6.2.10 Sprinkler Heads: Sprinkler heads shall be as specified on the Project Landscape Improvement Plans.

PROJECT NAME:

SHEET TITLE:

STANDARD LANDSCAPE SPECIFICATIONS FOR CITY STREETSCAPE PROJECTS BUILT BY DEVELOPERS

◇	REVISIONS	DESIGN BY	DESIGN DATE	CITY APPR.	APPR. DATE

STAMP & SIGNATURE BY CALIFORNIA LICENSED LANDSCAPE ARCHITECT:

CONSULTANT'S NAME, ADDRESS & PHONE:

PERMIT #
PROJECT #
PROJECT INSPECTOR:
VM:

PROJECT ENGINEER	DATE 6/29/07	LANDSCAPE DESIGN REVIEW GABRIELLE WILDER,	DATE 6/27/07
DEPARTMENT OF TRANSPORTATION, LANDSCAPE MAINTENANCE	DATE 6/25/2007	DEPARTMENT OF TRANSPORTATION, LANDSCAPE MAINTENANCE	DATE 6/27/07
MUNICIPAL WATER, SBWR Timothy S.N. Town	DATE 6-21-07	SURVEY SECTION Patty Cannon	DATE 6/25/07

DEPARTMENT OF PUBLIC WORKS
SAN JOSE, CALIFORNIA

CITY OF SAN JOSE
CAPITOL OF SILICON VALLEY

APPROVED BY KATY ALLEN
DIRECTOR OF PUBLIC WORKS

6.2.11 Electrical Equipment and Wiring: Electrical wiring, fittings, and appurtenances shall conform to the requirements of the following specifications:
Underground Conductor: The conductors which serve the automatic control valves shall be 14 AWG, continuous copper direct bury wire of the size shown on the Project Landscape Improvement Plans. The insulation shall be 4/64 inches, U.L. approved Type U.F. and shall be able to withstand a crush test of 5000 psi. Common or neutral conductors shall be white.
The control wires to the automatic control valves shall be red. The spare wires used when necessary shall be black. If more than one controller is necessary, the automatic control valve wires for the other controller(s) shall be a different color than red. The color(s) shall be approved by the Engineer prior to installation.

6.2.12 Conductors from flow sensor and master valve to Controller: The contractor shall install four (4) 14 gauge wires from the master valve and flow sensor to the irrigation controller inside of a 1 inch electrical PVC conduit. The wires shall be spliced inside of a #3-1/2 pull box at 200 feet maximum interval between the master valve and flow sensor and the controller.

6.2.13 Locator Wires and Accessories: Locator wires shall be #12 AWG, continuous, bare copper conductor. The locator wire shall be identified as "Locator Wire" using Thomas and Betts E-Z Code Type SM markers, or approved equal, and self-locking cable ties. The alpha-numeric characters for cable markers shall be hot stamped machine printed on sleeves with permanent black ink. Printed alpha-numeric character sleeves shall be white PVC tubing resistant to temperature extremes, excessive moisture, common solvents, oils, gasoline, and ultra-violet and gamma radiation. Adhesive strip labels are not acceptable. Marker holders shall be fastened to the wire with a cable tie. All identification devices shall be provided complete with all holders, supports, and fastening accessories at each remote control valve and backflow device.

6.3 Construction Methods:

6.3.1 General: The Contractor shall install the specified pipe, valves, fittings, wiring, switches, controls, and appurtenances at the approximate locations indicated on the Project Landscape Improvement Plans and as per the latest version of the "South Bay Water Recycling Rules and Regulations." The Engineer shall indicate specific locations. **Cross connections between the irrigation/recycled water system and the potable water system are strictly prohibited at all times.** The Contractor shall provide all temporary storerooms and shops that he may require at the site for the safe and proper storage of his materials, tools, etc. These rooms shall be constructed only in locations approved by the Engineer, as designated on the location map, and must in no way interfere with the work of any other Contractor. At such times as these rooms interfere with the proper installation and completion of the work, they shall be removed by this Contractor at his expense, within three (3) days after having been notified by the Engineer that such removal is necessary.

6.3.2 Pipe Separation: A minimum ten-foot (10') separation between parallel buried recycled and potable water pipelines shall be maintained where possible. In no cases is horizontal separation of less than four feet (4') allowed between buried recycled and potable water pipelines. **Potable and recycled water pipelines shall not be installed in the same trench.** Constant pressure recycled water pipelines shall be located a minimum of twelve-inches (12") below the potable water pipelines. Lateral recycled water pipelines (non-pressure) are allowed over potable pipelines with a minimum of 12 inches vertical separation.

6.3.3 Trenching: Trenches for pipe and electrical conductors may be excavated manually or with mechanical trenching equipment. Mechanical trench diggers used on the site shall be essentially vertical so that a minimum of surface is disturbed. Road patrols or graders shall not be used to excavate the trench with their blades. The bottom surface of trenches shall be essentially smooth and free from coarse aggregate. Trenches for pipe shall be excavated to the depth shown on the Project Landscape Improvement Plans.

6.3.4 Solvent Weld Joints: Contractor shall use only the solvent supplied and recommended by the manufacturer to make plastic pipe joints. The pipe and fittings shall be thoroughly cleaned of dirt, dust, and moisture before applying solvent. The Contractor will make solvent weld joints with nonsynthetic bristle brush in the following sequence:
(1) Apply a liberal even coat of purple-colored PVC primer to the pipe and fittings immediately prior to applying the solvent.
(2) Then apply a liberal even coat of solvent to the inside of the fittings and then to the outside of the pipe, making sure that the coated area is equal to the depth of the fitting socket.
(3) Insert the pipe quickly into the fitting and turn the pipe approximately 1/4 turn to distribute the solvent and remove air bubbles. Hold the joint for approximately 15 seconds so the fitting does not push off the pipe.
(4) Use a clean rag and wipe off all excess solvent. This is to prevent weakening at joint.
(5) Be sure that in going to the next joint, the pipe is not twisted, disturbing the last completed joint.
(6) Allow at least fifteen (15) minutes set up time for each welded joint before moving.

6.3.5 Threaded Connections for Irrigation Heads and Remote Control Valves:
(1) For all PVC threaded connections, use teflon tape only. In no event shall an oil base joint compound be used on a PVC joint. On plastic to steel connections, the Contractor shall work the steel connections first.
(2) All galvanized steel threaded connections and exposed threaded areas, use soft setting pipe thread compound (Whitlam Blue Majic Industrial Grade or approved equal).
(3) All galvanized or PVC swing joints shall move freely upon installation.

6.3.6 Storage and Installation of Pipe: The Contractor is cautioned to exercise care in handling, loading, unloading, and storing plastic pipe and fittings. All plastic pipe and fittings shall be stored under cover before using, and shall be transported in a vehicle with a bed long enough to allow the length of pipe to lay flat so as not to be subject to undue bending or concentrated external load at any point. Any section of pipe that has been dented or damaged will be discarded until said section of pipe is cut out and rejoined with a coupling. The Contractor shall provide the necessary mason's lines and supports to insure installation of the pipe to line and grade, as staked by the Engineer. The Contractor's facilities for lowering the pipe into the trench shall be such that neither the pipe nor the trench will be damaged or disturbed. All pipes shall be assembled free from dirt and pipe scale and shall be reamed and burrs removed. The main line supply shall be flushed out and tested for leaks before backfilling and with control valves in place and before lateral pipes are connected to valves. Each section of lateral pipes shall be flushed out before sprinkler heads are attached. The underground galvanized steel pipe and fittings at the backflow prevention device shall be triple wrapped with plastic. Never lay plastic pipe when there is water in the trench. The Engineer shall inspect all pipe before it is laid and reject any section that is damaged by handling or is found to be defective to a degree which will materially affect function and service of pipe. Plastic pipe will expand approximately six inches (6") per thousand feet (1,000') between day and night temperatures in hot climates. Therefore, pipe shall be snaked from side to side of trench bottom to allow for expansion and contraction. All foreign matter or dirt shall be removed from the inside of the pipe before it is lowered into position in the trench, and it shall be kept clean by approved means during and after laying of pipe.

6.3.7 Remote Control Valves: Shall be installed as shown on the Project Landscape Improvement Plans. Where an R.C.V. is shown at the edge of turf and shrub area, the intent is that the R.C.V. shall be placed in the shrub area rather than in the turf area. Particular attention shall be paid to the depth of the installation from the top of the valve to the bottom of the valve box lid.
Contractor shall tag all remote control valves indicating the number of the station in relation to the irrigation controller and irrigation plan.

6.3.8 Flow Meter and Master Valve: Shall be installed per the detail as shown on the Project Landscape Improvement Plans and per the manufacturer's recommendations. Particular attention shall be paid to the requirements for upstream and downstream distance measurements for the flow meter and master valve to other components, and the depth of the installation from the top of the meters to finished grade.

6.3.9 Installation of Conductor in Trenches: Conductors may be installed in the same trench as the water pipe. All clearances between conductors, pipes, and trench walls shall conform to the dimensions shown on the typical cross sections and other details on the Project Landscape Improvement Plans.
Sharp bends or kinks in the conductor shall not be permitted. Conductors shall be unreeled in place alongside or in the trench and shall be carefully placed along the bottom of the trench. Under no condition shall the conductor be unreeled and pulled into the trench from one end. Where two or more conductors are laid parallel in the same trench, they shall be taped together not less than every 25 feet. Wherever a splice occurs, a valve box shall be installed. Wire splices shall be connected as shown in details. Should any damage to the conductors occur during the construction of the facility, the Contractor shall be responsible to remove all damaged conductors and replace with new conductors from the previous pull box to the next pull box.
Under no circumstances shall a splice be allowed other than within a remote control valve box or other pull box as shown on the Project Landscape Improvement Plans and no additional splice boxes shall be allowed without the written approval of the Engineer.
Not less than one (1) foot of cable slack shall be left on each side of all splices at all points where cable is connected to field equipment. The slack cable shall be placed in the trench in a series of S curves.

6.3.10 Installation of Locator Wires: Strap the locator wire to the top of all main lines and quick coupling valve lines every ten feet (10'). One locator wire is required in every main line and quick coupling valve line trench, spliced per City Standard Detail E-54. Loop locator wires up into each valve box and attach a plastic identification marker onto the locator wire with a nylon tie.

6.3.11 Installation of Pipes Under Paving: Where irrigation mains or laterals are to be installed under paving, a Class 315 PVC sleeve shall be installed. The inside diameter of the sleeve shall be a minimum of 2 inches larger than the outside diameter of the main, lateral, or sleeve, whichever is greater. A separate sleeve shall be installed for irrigation control wires. The minimum diameter shall be 2 inches.

6.3.12 Installation of Sprinkler Heads: Sprinkler heads in open areas shall be installed at least four inches (4") above finished grade at the time of installation. Within five (5) days of notification by the Engineer, Contractor shall, as part of the work under this contract, make whatever adjustments of pipe, fittings, valves, or sprinkler heads necessary to bring the system to the proper level of the permanent grade. At this time, heads shall be made completely firm with sand. Sprinkler heads along walks, mow bands, and driveways, where the finished grade level is established, shall be set flush at the time of installation.

6.3.13 Backfilling: The procedure for backfilling shall be the same for trenches with pipe only, conductor only, both pipe and conductor only, or both pipe and conductor or conduit and conductor. All lumber, rubbish, and large rocks shall be removed from the trenches. Pipe shall have a firm, uniform bearing for the entire length of each pipe line to prevent uneven settlement. Wedging or blocking of pipe shall not be permitted. After the pipe and/or conductor have been installed, the trench shall be backfilled to the level shown on the Project Landscape Improvement Plans with white sand such as Olympia No. 2 (coarse grained sand, dirt and salt free) which shall contain no particles that would be retained on a 1/4" sieve. Sand shall be jetted lightly. Sand backfill shall be used for all irrigation pipe including laterals and main lines. The remainder of the backfill shall be topsoil material, which shall not be less than 8" deep. Trenches shall not be excessively wet and shall not contain pools of water during backfilling operations. Extreme care shall be exercised by the Contractor while backfilling. Any materials or equipment damaged while backfilling shall be repaired or replaced by the Contractor as directed by the Engineer, at no cost to the City.

6.3.14 Flushing: After the trench has been backfilled, all water pipe installed shall be flushed clear and clean of all dirt and foreign material. Mains shall be flushed prior to backfilling.

6.3.15 Testing:
1) After flushing, mains shall then be submitted to a leakage test. All tests on pressure lines shall be completed prior to backfilling; however, sufficient sand shall be placed in trenches between fittings to insure the stability of the line under pressure. In all cases, fittings and couplings must be open to visual inspection for the full period of the test. No testing shall be done until the last solvent welded joint has had twenty-four (24) hours to set and cure.
2) All control valves shall be closed. The sprinkler system main shall be slowly filled with water to line pressure.

Before testing, all air shall be expelled from the pipe. Where any section of the pipe system is provided with a concrete thrust block, the test shall not be made until at least five (5) days have passed after the concrete thrust block was installed. If higher early-strength cement is used in the concrete thrust block, the test shall not be made until at least two (2) days have elapsed. The duration of each test shall be four (4) hours, and during the test, the system shall be subjected to 150 p.s.i. line pressure. Should any section of pipe laid disclose leakage, locate and repair defective pipe or joint and retest.

6.3.16 "Record Drawings": The Contractor shall maintain reasonable clear and detailed records of all underground installations. These records shall be available to the Engineer at all times for verification while the work is in progress. These records are part of the work under this contract and shall be delivered to the Engineer in a good and acceptable condition prior to final acceptance of the work.

6.3.17 Controller Charts: The Contractor shall provide controller charts, one (1) for each controller, which shall be placed on the inside face of each controller enclosure door. Record drawings from which the charts are to be made shall be approved by the Engineer prior to preparing the charts. Each chart shall show the area controlled by the automatic controller and shall be the maximum size which the controller door will allow. Items on the controller chart shall include:
A. Connection to existing water lines.
B. Routing of pressure lines.
C. Routing of control valves.
D. Locations of remote control valves, gate valves, and quick coupling valves.
E. Other related equipment as directed by the Engineer.

The chart shall be a reduced drawing of the actual as-built system. However, in the event the controller sequence is not legible when the drawing is reduced, irrigation symbols shall be enlarged to a size that will be readable when reduced.
The chart shall be a black line or blue line ozalid print, and a different color shall be used to indicate the area of coverage for each station. When completed and approved, the chart shall be hermetically sealed between two pieces of plastic, each piece being a minimum 10 mils. These charts shall be completed and approved prior to final inspection of the irrigation system.

6.3.18 After the system has been completed, the Contractor shall instruct the Engineer in the operation and maintenance of the system and shall furnish a complete set of operating instructions prior to final acceptance.

SECTION 7 - PLANTING:

7.1 Description: The work includes: installation of water barriers and weed barriers in medians islands, installation of root barriers, the amendments and conditioning of the topsoil, soil testing to verify the installation of soil amendments, furnishing and planting of trees, shrubs, and ground covers and seeded turf, installation of organic pre-emergent for weed control treatment in all planting areas, installation of weed barrier fabric under mulch and gravel, installation of stabilized decomposed granite and decorative gravel in areas as shown on plan, protection of the work, and cleaning up as shown on the drawings and herein specified.

7.2 Materials:

7.2.1 Moisture Barrier: Barriers shall be suitable as a moisture and/or water barrier. Barrier shall be installed in median islands per details and shall be model WB24/40 DeepRoot Water Barrier as manufactured by DeepRoot or an approved equal. DeepRoot products are supplied by Ewing Irrigation Products, contact phone number for Ewing is (408) 436-8848. Barriers shall be High Density Polyethylene (HDPE), 40 mil or 0.040" (1.02mm) thickness, with a tensile stress at yield of 4,100 psi minimum.

7.2.2 Root Barriers: Barriers shall be suitable as a root barrier for linear (park strip) or surround (tree well) applications. The root barriers shall be composed of interlocking panels 18" deep and 24" wide, fabricated from Polyethylene or Polypropylene. Polystyrene is not an acceptable material for root barriers. Root barriers shall be installed per details and manufacturer's specifications. Root barriers shall be UB 18-2 Root Barrier as manufactured by DeepRoot, or the Root Solutions as manufactured by Vespro, or an approved equal. Deep Root products is supplied by Ewing Irrigation Products, contact phone number (408) 436-8848. Root Solutions are supplied by Capital Wholesale Nursery, contact phone number (408) 239-0587

7.2.3 Topsoil Soil Amendment and Conditioning: Shall be per the recommendations provided in the soil analysis report(s) provide by the soil lab in Section 3 of these Standard Landscape Specifications. The follow specification can be used for purposes of bidding. The Contractor shall be uniformly spread and incorporate the following materials with a rotary cultivator, to obtain a homogeneously blended soil six inches (6") in depth per 1,000 square feet, the following amendments into the top 6" of soil located in all planting areas, as identified on the Planting Plan:
5 cubic yards Compost
18 pounds 27-8-11 Commercial Fertilizer
160 pounds Agricultural Gypsum

7.2.4 Compost: Compost for Soil Amendments: Compost shall be Super Humus Compost as manufactured and supplied by BFI Organics or an approved equal. Compost shall be manufactured from recycled leaf or yard trimmings, whenever possible. BFI is located at Newby Island Recyclery, 1601 Dixon Landing Road, Milpitas, CA 95035 phone number (408) 945-2801. Acceptable ranges for compost, are listed below:
1) Gradation: A minimum of 90% of the material by weight shall pass a 1/2" screen. Material passing the 1/2" screen shall meet the following criteria:

Percent Passing	Sieve Designation
85-100	9.51 mm (3/8")
50-80	2.38 mm (No. 8)
0-40	500 micron (No. 35)

2) Organic Matter Content: >80% on a dry weight basis.
3) Carbon to Nitrogen Ratio: Maximum 25:1 if material is claimed to be nitrogen stabilized.
4) pH: 5.5 – 7.5 as determined in saturated paste.
5) Soluble Salts: Soluble nutrients typically account for most of the salinity levels, but sodium should account for less than 25% of the total. To avoid a leaching requirement, the addition of the compost shall result in a final ECe of the amended soil of less than 4.0 dS/m @ 25°C as determined in a saturation extract.
Use the following table to determine the maximum allowable ECe (dS/m of saturation extract) of compost at desired use rate and allowable ECe increase:

Desired Use Rate		Maximum Allowable ECe Increase from Amendment		
Cu. Yds. Amendment per 1,000 sq. ft. for incorporation to 6" depth	Volume Percentage of Amendment	1 dS/m	2 dS/m	3 dS/m
		Maximum ECe of Compost		
1	5	14	28	42
2	11	7	14	21
3	16	5	9.5	14
4	22	3.5	7	10.5
5	27	3	5.5	8.5
6	32	2.5	4.5	7

Example: Specification calls for 5 cubic yards compost per 1,000 square feet for incorporation to 6" depth, and site soil has an ECe of 2.0. In order to avoid exceeding ECe of 4 in final blend, compost ECe should be less than 5.5 dS/m.
6) Moisture Content: 35 - 60%
7) Contaminants: The compost shall be free of contaminants such as glass, metal, and visible plastic. The product shall be certified through the U.S. Composting Council's Seal of Testing Assurance Program, and shall be tested using test methods outlined by the program.
8) Particle Characterization: Identifiable wood pieces are acceptable, but the balance of material should be soil-like without recognizable grass or leaves.
9) Maturity/Stability: <8 mg CO_2-C per g OM per day.
10) Appearance and odor: Physical characteristics suggestive of maturity include: Compost shall be a dark brown to black color. Acceptable compost odors are described as follows: none, soil-like, musty, or moldy. Unacceptable compost odors are described as follows: sour, ammonia, or putrid. Identifiable wood pieces are acceptable, but the balance of material should be soil-like without recognizable grass or leaves.
11) Weed Seed/Pathogen Destruction: Pasteurized (PFRP as outlined in State composting guidelines).
12) Heavy metals: less than the maximum limits established by US EPA 503 regulations.

7.2.5 Planting Mix: Planting mix for backfilling planting holes shall consist of two parts of soil excavated from the planting holes (free of rock over one-half inch (1/2") in diameter) and one part soil amendment. The materials shall be thoroughly mixed until they lose their individual identities.

7.2.6 Trees, Shrubs, and other Plants: Plants shall be as specified in the Plant List on the Project Landscape Improvement Plans and shall be healthy, vigorous stock, free of insects and disease. Use only plant materials that are first class representations of the genus, species, and cultivars specified and that conform to all State and local laws governing the sale, transportation, and inspection of plant materials. Only healthy and shapely plants of the size and type indicated and only plants with a normal plant and root structure will be acceptable. All plants shall be nursery grown stock and shall have been grown in the specified containers for not less than six (6) months but shall not have been overgrown in the containers so as to become root-bound. They shall have straight, single trunks, unless otherwise specified on the Project Landscape Improvement Plans. No pruning shall be undertaken before planting. Plants specified to be multi-trunk shall have at least three main leaders from the base. Any and all plants that have any encircling roots (not root-bound) shall have root balls lightly slashed on a minimum of three (3) sides to stop encircling root growth. All plants shall be free from disfiguring knots and sunscald injuries, abrasions, abrasion of bark, or other objectionable disfigurements. Tree trunks shall be sturdy and well "hardened off"
Any plants delivered to the job site, which are found to be not true to name or unsuitable in growth or conditions, shall be removed from the site and replaced with acceptable plants. All plants shall be of the genus, species, cultivar, size, age, and condition as specified herein and as shown on the Project Landscape Improvement Plans. Under no condition will there be any substitution of plants or sizes for those listed on the accompanying Project Landscape Improvement Plans, except with the written consent of the Engineer.
Tagging: All plants shall be true to name, and one of each bundle or lot shall be tagged with the name and size of the plant in accordance with the standards of practice recommended by the American Nursery and Landscape Association.
Recommended Clearances for Street Trees: The Contractor shall make every effort to provide the following clearances for street trees:
- Under street tree canopies: 14-feet minimum of clearance over finish surface of street pavement, and 8-feet minimum clearance over finish surface of sidewalks.
- Electrolier, street light, or traffic signal poles: 20-feet minimum.
- Soundwalls: 8-feet minimum
- Underground water and gas lines: 5-feet minimum.
- Underground sanitary and storm sewer lines: 10-feet minimum.
- Stop signs and other traffic control devices: 20-feet minimum.
- Fire Hydrants: 5-feet minimum.
- Driveways: 5-feet minimum from residential and 10-feet minimum from commercial.
- Projected street corners: 40-feet minimum.
- Edges of Pavement, mow bands and fences: 8-feet minimum
- Avoid conflicts with tree canopies of existing street trees or existing trees on adjacent private property.

Inspection: All plant materials shall meet the specifications of Federal, State, and County laws requiring inspection for plant diseases and insect infestations. Inspection certifications required by law shall accompany each shipment, invoice, or order for stock, and when such plants arrive at the site of the work, the certificate of inspection shall be filed with the Engineer. Inspection of all plant material for acceptance shall be made at the project site at time of delivery. All plant material shall be approved by the Project Landscape Architect prior to installation. Any and all rejected plant material shall be marked as such and removed from the project site immediately.
Delivery and Protection: The Contractor shall notify the Engineer at least two (2) days prior to the delivery date of each shipment of plant materials. Plant materials shall be protected and maintained in good condition. Bare root and balled materials shall be watered regularly and placed in a cool area, protected from sun and wind.

7.2.7 Tree planting stakes: shall be shall be untreated lodge pole pine wood poles, as manufactured by C&E Lumber (909) 626-3591 , or approved equal, 2" in diameter for trees in 15 gallon containers and 3" in diameter for trees in 24" box containers, unless otherwise designated on the applicable drawings. They shall comply with American Standards Association Specification 0-5-1-1963 entitled "Specifications and Dimensions for Wood Poles", except that they are to be machine peeled and modified as herein: Spiral grain shall be limited to one complete twist in thirty feet (30'), sweep shall be limited to one plane and one direction only, and a straight line connecting the center of the pole at the top with the center of the pole at the butt shall lie within the body of the pole throughout its entire length.

7.2.8 Weed Barrier Fabric: Install weed barrier fabric under all mulched and gravel areas, to provide long term weed control. The fabric shall be woven, polypropylene and installed per the manufacturer's specifications.

7.2.9 Mulch: 4" deep layer of mulch, Pro-Chip City of San Jose Type medium grind with brown colorant made from recycled yard trimmings, or an approved equal.

7.2.10 Decorative gravel: Shall be 4" deep layer of granite rock, ¾" minimum to 1" maximum size, California gold in color.

7.2.11 Stabilized, decomposed granite surfacing: Shall be decomposed granite track fines, California gold in color, maximum dry density shall be 130 p.c.f., optimum moisture shall be 8.8%, and the size of the individual fines shall conform to the following gradings:

Sieve Size	% Passing
#4	85-100
#8	55-80
#30	30-45
#200	10-20

The performance characteristics of the decomposed granite should not be impacted by minor variations of the gradation (+/-10%).
Stabilizer: The material shall include Stabilizer ™ binder additive. The organic binding agent shall be a premium non-toxic, colorless, odorless concentrated powder that binds decomposed granite together to provide a firm surface. It is manufactured by Stabilizer Solutions of Phoenix, Arizona (1-800-336-2468) or approved equal, as supplied by TMT Enterprises, Inc., San José, Ca., Phone (408) 432-9040 or approved equal. The binding agent shall be premixed at a standard rate of 12-16pounds per ton of decomposed granite. It is critical that Stabilizer be thoroughly and uniformly mixed throughout the decomposed granite prior to installation.

7.2.12 Turf Seed: Shall be sown at the rate of ten (10) pounds per 1,000 square feet. All seed shall be certified and guaranteed by the supplier as to purity and germination. The seed shall have the following proportions:

Seed	Proportion by Weight	Purity	Germination
Blend of :			
'Rugby' Kentucky Bluegrass	10%	98%	
'A-34' Kentucky Bluegrass	10%	98%	
'Manhattan 3' or 'Manhattan 4' Perennial Ryegrass	35%	98%	
'Fiesta 3' or 'Brightstar SLT' Perennial Ryegrass	35%	98%	
'Dawson', 'Marker', or 'Seabreeze Slender Creeping Red Fescue	10%	98%	

7.2.13 Turf Sod: Shall be Bolero Plus dwarf fescue, available from Capitol Wholesale Nursery or approved equal. Bolero Plus is 95% dwarf fescue and 5% bluegrass.
The turf sod shall be installed per manufacturer's specifications and to the satisfaction of the Engineer. Sod shall be one year old minimum, well matured with a substantial amount of rhizomes visible on underside of sod. Sod shall be certified and guaranteed by the supplier as to the purity and mixture of seed from which it was grown. Sod shall be thick, dense, and healthy and field grown on fumigated soil with the grass having been mowed at 1" height before lifting from the field. Sod shall be free from noxious weeds, insects, and stones. All sod shall be inspected by the Inspector at the time of delivery. Sod shall be sufficiently moist so that the soil will adhere to the roots when handled. Delivered sod shall contain not more than 5% broken rolls. Sod that has become moldy, withered, or yellow from storage or drying will be rejected at the time of planting. Sod out for more than 24 hours from the time of cutting shall not be used.

7.3 Construction Methods:

7.3.1 Installation of Soil Amendment and Conditioning, and Additional Soil Testing for Quality Assurance: All areas to be planted or seeded shall receive soil amendments and conditioning, uniformly distributed, as specified in a soils analysis report as described in Section 3, and the same shall be thoroughly rototilled into the top six inches (6") of soil. The results of the soils test shall form the actual soil amendment recipe. Any changes in materials or quantities as a result of the soils test shall be approved by the Engineer. After application of soil amendments and preparation of soil has been completed as specified, the areas to be planted or seeded shall be finished graded to a smooth, uncompacted grade. The Contractor shall fine grade so that proper drainage of the entire planting area is assured. All rocks, soil lumps, and other deleterious materials larger than one inch (1") shall be removed and the area raked smooth. After the soil amendments have been installed, the Contractor shall again provide the services of the soil lab, to visit the site and take samples, and the soil lab provide the Engineer with an additional soil analysis report to confirm that the topsoils at the site have indeed been amended in compliance with these Standard Landscape Specifications. The Contractor shall avoid any compaction of the soils after amending and conditioning, and shall not permit vehicular or equipment traffic over such areas. In the event of such compaction, the Contractor shall be required to recultivate any areas thus compacted, at his own expense. All soil preparation and planting operations shall be conducted under favorable weather conditions only. Soil shall not be worked when excessively dry or wet, and the Engineer reserves the right to stop any work taking place during a period when conditions are considered detrimental to soil structure or plant growth.

7.3.2 Turf Seed: Seed mixture shall be pre-mixed by a mechanical mixer. Turf seed shall then be sown at the rate of ten pounds (10 lbs.) per 1,000 square feet, raked in lightly, and rolled. The seeded turf areas shall then be top dressed, with nitrified sawdust.

7.3.3 Turf Sod:
Laying Sod: Turf sod shall be laid on a firm, moist bed of soil. Sod shall be installed to the smooth finish grade with tight edges and no gaps between sod pieces. Lay the first strips end to end along a straight line. Butt joints tightly together, but do not overlap the edges. Stagger joints as you would when laying bricks. Special care shall be given to placement of sprinkler heads and other various irrigation equipment. Use a sharp knife or other tool to cut sod to fit curves, edges, and sprinklers. Contractor shall install turf sod in conformance with all manufacturer's recommendations. Do not wait until entire lawn is laid to begin watering. Lightly water one section at a time to keep it from drying out. Repeat until entire lawn is complete. Any mounds or depressions occurring after sodding shall be corrected. After laying sod and watering lightly, roll lawn lightly with a roller to form good contact between sod and soil. Then water the entire lawn thoroughly to a depth of at least six inches (6"). A daily watering is vital for the first ten days. After sod is established, decrease the frequency of waterings, but increase the amount of water per application. The Contractor shall avoid any compaction of the sod after installation and shall not permit vehicular or equipment traffic over such areas. In the event of such compaction, the Contractor shall be required to re-sod any areas thus compacted, at his own expense.

7.3.4 Trees and Shrubs:
Location Staking: Each tree and shrub location shall be as indicated on the Project Landscape Improvement Plans and shall not be in conflict with any existing utilities, utility boxes, etc. Any and all plants improperly located shall be replanted in their proper location at no additional cost to the City. Excavate holes by auger, unless otherwise specified for particular situations. Before an augered hole is made, the top six inches (6") of amended soil shall be removed and stockpiled at one side of hole. An augered hole of the appropriate size shall be made to a depth of the container. The size of the auger shall depend on the size of the plant container. The hole shall be broken in with a crowbar until it is twice the width of the container, leaving the sides rough with no "auger slick". Break up the bottom six inches (6") of soil prior to placing plant. The plant shall then be set in an upright position in the center of the hole and the space around it backfilled with planting mix so that a minimum of four inches (4") of amended soil is around the sides of the root ball. Do not place organic matter beneath the plant's root ball. The plant shall be set so that the root crown is 1/2" to 3/4" higher than average surrounding grade. Dispose of balance of borings around plant in a manner that water is shed away from the crown or trunk of plant. When the backfill around the plant is approximately two-thirds completed, the plant shall be thoroughly watered, after which the backfill shall be completed to the grade of the surrounding area. No boxed or canned trees shall be planted if the ball is broken or cracked, either before or during the process of planting.
Tree Staking: All trees shall be provided with two (2) Lodge Pole Pine Stakes, as shown on Project Landscape Improvement Plans. Tree stakes shall not be driven into the rootball. The tree ties shall be ArborTies, or an approved equal, screwed to stakes in one place, and located 1/3 of the distance down the trunk from the main fork or branches.
Soil Berm: In all planting areas (excluding turf), each plant shall have a soil berm constructed around it to retain water. The soil berm shall be at least four inches (4") high and shall have a minimum diameter of two feet (2') for shrubs and three feet (3') for trees.
Edging: Each tree in turf areas shall have the turf removed in a 30" diameter ring from around the tree trunk.
Pruning: Pruning shall be limited to a minimum necessary for removal of injured twigs and branches, with approval from City Arborist.
Watering: Immediately after planting, each tree or shrub shall be thoroughly watered, and the areas between soil berms shall be raked smooth.
Planting: A. Lift plants only from the bottom of the root balls or with belts or lifting harnesses of sufficient width not to damage root balls. Do not lift trees by their trunk or use the trunk as a lever in positioning or moving the tree in the planting area.
B. Remove plastic, paper, or fiber pots from containerized plant material . Pull roots out of the root mat, and cut circling roots with a sharp knife. Loosen the potting medium and shake away from the root mat. Immediately removing the container, install the plant such that the roots do not dry out. Pack planting mix around the exposed roots while planting.

7.3.5 Ground Covers:
Planting Ground Covers: Planting shall take place in the existing prepared soil which shall be moist and friable, never dry or wet and soggy. The moist condition shall extend to the full depth of cultivation.
Spacing: The spacing of all ground cover plants shall be as indicated on the Project Landscape Improvement Plans. They shall be planted in evenly spaced rows with staggered triangular spacing and around the shrubs (to within one (1) foot) and trees (to within eighteen (18) inches).

7.3.6 Ground Surface treatments:
Mulch: Mulch shall be installed, 4" deep, as shown in Project Landscape Improvement Plans and be approved by the Engineer, with weed barrier fabric installed underneath for long term weed control.
Decorative Gravel: Decorative gravel shall be installed, 4" deep, as shown in Project Landscape Improvement Plans and be approved by the Engineer, with weed barrier fabric installed underneath for long term weed control.
Decomposed Granite Installation: Decomposed granite shall be installed, 4" deep, as shown in Project Landscape Improvement Plans and be approved by the Engineer, both to color and gradation. Upon thorough moisture penetration, compact aggregate screenings to 95% relative compaction by compaction equipment such as : double drum roller (2-4 ton) or single drum roller (1,000 lbs.) vibratory plate tamp. Do not begin compaction for 6 hours after placement and up to 48 hours. Decomposed granite shall be installed in two - 2" lifts compacted to a 4" depth. Each lift shall be wetted, rolled, and compacted to 95% relative density. Installation of decomposed granite shall not occur on rainy days. Contractor shall submit a five lb. sample of decomposed granite to the Project Engineer for approval prior to delivery of material to the site. Remove and replace decomposed granite paving that is damaged, defective, or does not meet requirements of this section.

7.3.7 After all planting operations have been completed, and ground surface treatments have been installed, the Contractor shall remove all trash, empty plant containers, tools, and equipment used in this work, or any other debris accumulated by the work, from the site of the work, and all scars, ruts, or other marks in the area caused by this work shall be repaired at the Contractor's expense, and the ground left in a neat and orderly condition throughout the site of the work.

7.3.8 Inspection for Starting of Turf & Planting Maintenance Period: The Contractor shall adjust all remote control valves to close within 45 seconds to one minute upon shut-down from the irrigation controller. Upon completion of the irrigation, turf, and planting work, when a satisfactory stand of turf (between 2 and 3 inches high) has been established, and after the first cutting, the Contractor shall notify the Engineer that the project is ready for maintenance. The Engineer shall then schedule a pre-maintenance walk-through inspection for the project and shall notify the Contractor and various City representatives, including DOT & SBWR, as to the time and date. Upon inspection, if the Engineer finds the irrigation, turf, and planting work complete and in compliance with the Project Landscape Improvement Plans, the Engineer shall authorize the start of the maintenance period. Written notice will be given the Contractor to inform him as to the starting date of the maintenance period.

SECTION 8 - MAINTENANCE:

8.1 Description: The work includes: all items of work in preparation to the beginning of the maintenance period; inspections prior to beginning, during, at two weeks prior to ending, and at completion of the maintenance period, and any other items of work pertaining to the maintenance period.

8.2 Maintenance:

8.2.1 The maintenance period for the City Streetscape Project shall be a minimum of sixty (60) calendar days or until all Public Tract Improvements required by Department of Planning, Building and Code Enforcement to be provided by the Developer are ready for acceptance by City, whichever is the later.

8.2.2 Work shall include, but is not limited to, all watering, weeding, fertilizing, cultivating, spraying, cutting, and pruning necessary to keep the plant material in a healthy, growing condition and to keep the planted areas neat and attractive in appearance throughout the plant maintenance period. This work shall also include any additional watering by hand which may be necessary. All plants shall be watered not less than twice a week. Each watering shall be of such quantity as to provide optimum growth conditions. The Contractor shall provide equipment and means for the proper applications of water to planted areas not provided with an irrigation system.

8.2.3 Maintenance shall also include keeping all planting, paving, and curb areas throughout the entire project site free from weeds, paper, glass, debris, and trash during the entire duration of the contract. The Contractor shall clear the project site of all weeds, paper, glass, debris, and trash a minimum of once a week.

8.2.4 Trees, Shrubs and Ground Covers: Shall be watered, pruned and sprayed as required to assure a vigorous, thriving condition from day of planting to end of maintenance period. Only natural pruning techniques are to be employed unless specific permission is obtained from the Engineer to allow hedging to be performed on the plant materials. Weeds shall be removed during this period.

8.2.5 Should the Contractor fail, be neglectful, or be negligent in furnishing the required maintenance and/or maintaining the project site, the City may maintain these facilities. The City shall charge the Contractor the cost for providing the required maintenance by deducting this cost from the periodic progress payments due the Contractor as these costs are incurred by the City.

8.2.6 Turf: Shall be watered, re-seeded/re-sodded, edged, mowed and kept weed free as required to assure a neat appearance and a healthy and vigorous growth from day of seeding/sodding to end of maintenance period. The first mowing shall not be done until the grass is generally at least two (2) inches, but less than three (3) inches, high. For the first mowing and all subsequent mowings, the mower shall be set to cut at a height of 1-1/2 inches.
Subsequent mowings, as required, shall be done before the grass is three (3) inches high. Grass clippings for all mowings shall not be allowed to lie after mowing. A grass catcher shall be used on the mower, and grass clippings shall be collected and discarded off site. At two weeks prior to the end of the maintenance period, the Contractor and the City shall agree upon, and the City shall take control of the irrigation scheduling. The Contractor shall not do any "hand watering" or in any way adjust the irrigation schedules during this two week period. If any problems or questions arise, the Contractor shall contact the Engineer for a determination of proper action. Just prior to the end of maintenance period, Contractor shall cut all grass, weed all beds, and generally put the whole work in first-class condition.

8.2.7 Additional Fertilizers during Maintenance Period: Immediately following the first mowing of the turf, all turf areas shall be fertilized with a soluble nitrogen fertilizer appropriate for the season, e.g. 16-6-8 at manufacturer's recommended rate. Reapplication of fertilizer shall take place after the first application on the maintenance period, as required by the manufacturer.

8.2.8 Guarantee and Replacement: Prior to and during the plant establishment period, should the appearance of any plant material indicate weakness and probability of dying, in the Engineer's opinion, that plant shall be replaced immediately by the Contractor, at his own expense. Replacements shall be made in the same manner as specified for the original planting. At the end of the plant establishment period, all plant material shall be in a healthy growing condition. Any plant material replaced within the last thirty (30) days of the plant establishment period must be maintained by the Contractor for thirty (30) days from the date of replacement. The Contractor shall guarantee a weed free, even stand of the lawn grass (with 95% coverage) of the varieties specified. If such stand does not develop as a result of the first seeding, the Contractor shall re-seed and care for thin spots until an even stand with 95% coverage is produced.

8.2.9 Weed Control: Weed control herbicides, including pre-emergent herbicides, in addition to that which is specifically required elsewhere, may be applied to planted areas at no expense to the City if the Engineer deems it necessary. Type of herbicide to be used and method of application shall be approved by the Engineer.

8.2.10 Backflow Inspection: The Contractor shall perform a "Reduced Pressure Principal" test and maintenance report by a certified tester on an annual basis after the initial certification by the water company. The annual test shall be performed by the Contractor until final acceptance by the City. If the project is scheduled for final acceptance prior to the one year anniversary of the initial certification, then the Contractor shall provide a test and maintenance report two weeks prior to final acceptance or as directed by the Engineer.

8.2.11 Coverage Test: Upon notification by the Contractor, the Engineer shall schedule a full coverage test of the irrigation system. The coverage test shall include the entire site to ensure that all irrigation systems are in operation and functional, including any City maintained areas. Any discrepancies in the condition of the irrigation system between the beginning of the maintenance period and the end of the maintenance period shall be noted. The Engineer shall determine any repair work which shall be done prior to acceptance to the Project.

8.2.12 Beneficial Occupancy: At the start of the Maintenance Period, a portion or all of the project site shall be opened to the public for use. The Contractor and the City shall agree upon responsibilities of the maintenance and repair of those facilities during the remainder of the maintenance period.

8.2.13 One (1) Year Guarantee: Following the plant establishment period, the Contractor shall provide a written warranty which guarantees all trees for one (1) year from date of final acceptance of the contract. The Contractor shall replace any tree which has died, and the tree replacement shall be the same size container as originally designated on the Project Landscape Improvement Plans.

- END -

PROJECT NAME:

SHEET TITLE:

STANDARD LANDSCAPE SPECIFICATIONS FOR CITY STREETSCAPE PROJECTS BUILT BY DEVELOPERS

◇	REVISIONS	DESIGN BY	DESIGN DATE	CITY APPR.	APPR. DATE

STAMP & SIGNATURE BY CALIFORNIA LICENSED LANDSCAPE ARCHITECT:

CONSULTANT'S NAME, ADDRESS & PHONE:

PERMIT #
PROJECT #

PROJECT INSPECTOR:
VM:

PROJECT ENGINEER — 6/29/07 DATE
LANDSCAPE DESIGN REVIEW — GABRIELLE WILGER, 6/27/07 DATE
DEPARTMENT OF TRANSPORTATION, LANDSCAPE MAINTENANCE — 6/25/2007 DATE
DEPARTMENT OF TRANSPORTATION, LANDSCAPE MAINTENANCE — 6/27/07 DATE
MUNICIPAL WATER, SBWR — Timothy S.N. Town 6-21-07 DATE
SURVEY SECTION — DATE

DEPARTMENT OF PUBLIC WORKS
SAN JOSE, CALIFORNIA

CITY OF SAN JOSE
CAPITOL OF SILICON VALLEY

APPROVED BY KATY ALLEN
DIRECTOR OF PUBLIC WORKS

SHEET 10 OF 10